Construction Activities

Stormwater Management Plan

The Glen at Widefield East
and
Widefield Commercial Center Filing No. 1
Colorado Springs, Colorado

Prepared for:

Glen Development Company
c/o Widefield Investment Group
3 Widefield Boulevard
Colorado Springs, CO 80911
Phone: (719) 392-0194

Prepared by:

Kiowa
Engineering Corporation

1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

Kiowa Project No.'s: 14044 and 17044

May 10, 2018
PCD File No. CDR-18-004

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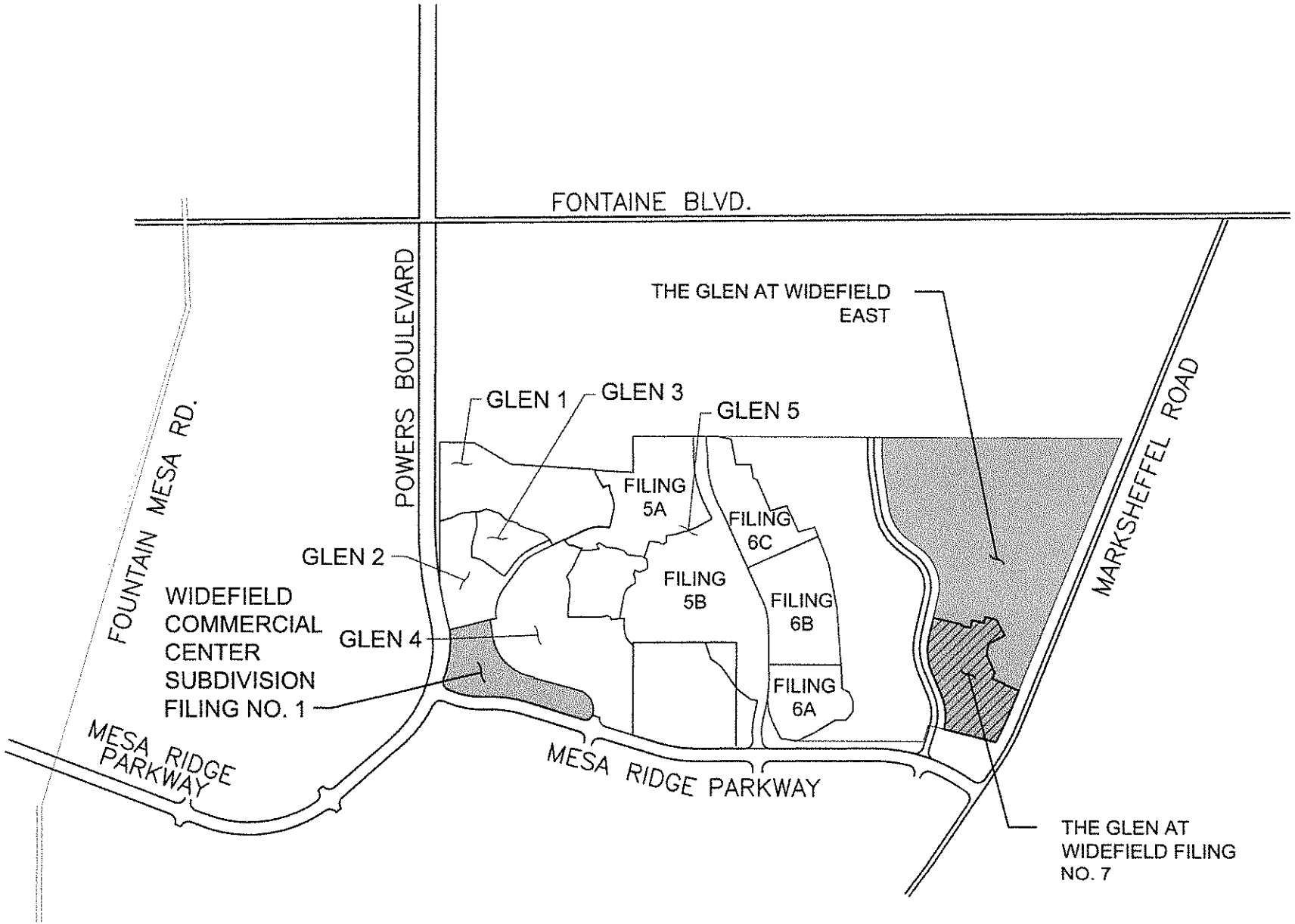


VICINITY MAP

SCALE: N.T.S.

Figure 1

STORMWATER PLAN OBJECTIVES

The objective of the Stormwater Management Plan (SWMP) is to define controls and measures to maintain water quality by eliminating or reducing pollutants in stormwater discharges during construction activities. A general schedule or phasing of Best Maintenance Practices (BMPs) will be determined by construction schedule and ground disturbances necessitating required erosion control methods/BMPs. Evaluations of and modifications to this plan may be necessary during the length of the construction project until the site is finally stabilized. This SWMP should be reviewed and modified as a part of the continuing overall process of evaluating and managing stormwater quality issues. A copy of the Stormwater Discharge Permit, SWMP, SWMP Site Maps (Figures 2, 3, 4, and 4A) and inspection logs shall be kept on site by the SWMP Administrator as to be available to federal, state and local agencies for inspection.

A Construction Activities Stormwater Discharge Permit has been applied for on January 24, 2016 from the Colorado Department of Public Health and Environment. The permit is included in Appendix 1. The general conditions associated with this permit should be followed through the duration of the land disturbing activities at the site. For additional details or more specific information, consult CDPS General Permit No. COR-030000 in Appendix 2.

I. SITE DESCRIPTION

A. Nature of the Construction Activity

The Glen at Widefield East will be a single family residential development located northwest of the intersection of Marksheffel Road and Mesa Ridge Parkway. See Vicinity Map (Figure 1) on the following page. Construction activities include the construction of homesites, access roads, and utility and stormwater infrastructure.

The Widefield Commercial Center Subdivision Filing No. 1 is currently undeveloped and is located northeast of the intersection of Powers Boulevard and Mesa Ridge Parkway. See Vicinity Map (Figure 1) on the following page. The site will be utilized as a spoils area for excess earthwork from The Glen at Widefield East project. Soil brought to the site will be from site grading and basement excavations generated from nearby Glen at Widefield residential projects. Soil will be delivered to the site by dump trucks. End dumps from the hauling operations will be graded flat and then roughened at a maximum time interval of 14 days.

B. Sequence of Major Activities

Construction activities for The Glen at Widefield East project are expected to begin in the Spring 2018 for the Widefield Commercial Center Subdivision Filing No. 1 early grading project. Prior to the commencement of the majority of clearing and grubbing activities, minimal clearing and grubbing may be necessary prior to install the initial erosion control features such as silt fences and vehicle tracking control. Subsequent to the installation of the silt fences and vehicle control, clearing and grubbing will commence, and grading will proceed as shown on the SWMP Site Map (Figures 2, 3, 4, and 4A). When the finished grades are attained, utility, roadway and stormwater infrastructure will be installed. In general, the SWMP Administrator will identify the precise schedule to be used during the term of this project.

Temporary erosion control measures are anticipated to be removed in the Spring of 2019.

Final Stabilization is anticipated to occur in the Summer of 2019.

C. Estimate of Area and Volume Disturbed

The Glen at Widefield East project area totals 245.4 acres of which approximately 172.8 acres will be subject to disturbance. The Widefield Commercial Center Subdivision Filing No. 1 project area totals 21.7 acres of which approximately 5.7 acres will be subject to disturbance. The estimated acres of disturbance corresponds to that necessary to install access roads, buildings, building pads, driveways, landscaping, stormwater facilities, and utilities. Locations of disturbed areas are as shown on the SWMP Site Map (Figures 2, 3, 4, and 4A.) All other areas are to remain undisturbed.

Earthwork cut and fill operations for The Glen at Widefield East project are more than 1,000,000 cubic yards, of which approximately 110,000 cubic yards of excess cut will be relocated to the Widefield Commercial Center Subdivision Filing No. 1 site.

D. Soil Data

Soil within the properties are classified within Hydrologic Soils Group B. C, and D as shown in the *El Paso County Soils Survey*. The soil types on the site are Nelson-Tassel fine sandy loams (B/D); Stoneham sandy loam (B); and Nunn clay loam (C). The soils have a permeability ranging from moderately rapid to moderate to moderately slow.

The early grading within Filing 1 pre-construction and the post-construction 100-year runoff coefficients are 0.5.

E. Existing Vegetation and Ground Cover

In the undisturbed condition, the ecology of the project site can be characterized as short grass prairie of the Western Great Plains Province dominated by blue grama grass. The grasslands present on site are composed of a majority non-native grass and herb species. The presence of non-native species such as crested wheat and smooth brome grass indicate that the site has been disturbed and reseeded. A few small elm and cottonwood trees are scattered across the site and shrub species such as rabbitbrush and silver sage can also be found in isolated locations.

The site has been disturbed over the years by agricultural uses such as sod production and irrigated hay fields and most recently a large portion of the ridge area has been used as a borrow area. Little is remains in a natural condition. Existing vegetation cover is in a poor condition due to on-going disturbance.

The site vegetation was evaluated on May 9, 2018 according to protocol recommended in the *Erosion Control and Stormwater Quality Guide* by the Colorado Department of Transportation (Section 4.11.1). Per guidelines, two fifty-foot transects were taken with results of 62% and 54% with and average existing vegetation cover of 58%.

F. Potential Pollution Sources

The location of all potential pollution sources, including ground breaking disturbing activities, vehicle fueling, storage of fertilizers or chemicals, concrete or asphalt batch plants, concrete washouts, among numerous other potential pollutants shall be enumerated in this SWMP. Further descriptions and locations can be found in Section III B 1 thru 13 of this report.

G. Non-Stormwater Discharges

At this time, no non-stormwater components of discharge, such as springs, landscape irrigation return flows, construction dewatering or other discharges are known to exist. If any non-stormwater components of discharge are known to exist, these items will be addressed in Section III C 8 of this report. If any non-stormwater discharges become apparent during the term of construction, the occurrence and mitigation shall be addressed in an addendum by the SWMP Administrator.

H. Receiving Waters

The site will be primarily drained by overland flow and roadways to proposed stormwater systems and detention and water quality basins that will discharge to the West Fork of Jimmy Camp Creek and Jimmy Camp Creek which is a tributary to Fountain Creek and ultimately to the Arkansas River.

II. SWMP SITE MAP

The Stormwater Management Plan Site Map (Figures 2, 3, 4, and 4A) is included in Appendix 4 and identifies the following:

A. Construction site boundaries:
B. All areas of ground disturbance;
C. Areas of cut and fill;
D. Areas used for storage of building materials, equipment, soil, or waste;
E. Locations of dedicated asphalt or concrete batch plants;
F. Locations of all structural BMPs;
G. Locations of non-structural BMPs where applicable;
H. Locations of springs, streams, wetlands, detention basins, irrigation canals, roadside ditches and other surface waters.

The SWMP Site Maps must be updated by the SWMP Administrator on a regular basis to reflect current conditions of the site at all times.

III. STORMWATER MANAGEMENT CONTROLS

A. SWMP Administrator:

The Owner shall designate the SWMP Administrator. The SWMP Administrator will likely be the Contractor or his/her designated representative and is responsible for developing, implementing, maintaining and revising the SWMP. Should the SWMP Administrator change for any reason, it shall be noted on this Plan.

SWMP Administrator: Rudy Cross, The Cross Company. If the SWMP Administrator should change for any reason note the change here _____.

B. Identification of Potential Pollutant Sources:

At a minimum, the following activities and sources shall be evaluated for the potential to contribute pollutants to stormwater discharges. The SWMP Administrator shall determine the need for and

locations of each of the following potential pollutant sources during the course of the construction project. The sources of any potential pollutants must be controlled through BMP selection and implementation.

1. All disturbed and stored soils;
2. Vehicle tracking of sediments;
3. Management of contaminated soils;
4. Loading and unloading operations;
5. Outdoor storage activities (building materials, fertilizers, chemicals, etc.);
6. Vehicle and equipment maintenance and fueling;
7. Significant dust or particulate generating processes shall be controlled by sprinkling with water and other appropriate means;
8. Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.
9. On-site waste management practices such as waste piles, liquid wastes, dumpsters, etc.
10. Concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment;
11. Dedicated asphalt and concrete batch plants;
12. Non-industrial waste sources such as worker trash and portable toilets; and
13. Any other areas or procedures where potential spills could occur.

C. Best Management Practices (BMPs) for Pollution Prevention

Best Management practices for erosion and sediment control implemented on the site to minimize erosion and sediment are:

1. Structural practices to be used on-site are straw bale check dams, silt fences, drainage swales, inlet protection, vehicle tracking control, erosion control blankets, erosion control logs, and temporary sediment basins. Minimal clearing and grubbing may be necessary prior to installing the initial erosion control features such as silt fences and vehicle tracking control. Prior to any construction activities, silt fences around proposed grading areas as shown on attached Figures 2, 3, 4, and 4A will be installed. Vehicle tracking control will be installed to manage sedimentation from construction vehicles exiting the sites. Inlet protection will be installed to filter stormwater before entering any watercourses. Final stabilization is anticipated to occur in the summer of 2019.

Description of structural Practices:

For The Glen at Widefield East project, an extended detention/water quality basin will be constructed southwest of the proposed Glen at Widefield Filing No. 7 and three other basins are proposed throughout the overall site. The extended detention/water quality basins will be used as a temporary sediment basin during construction of the site. Silt fencing will be used along the western boundary and along portions of the eastern and northern boundaries. Vehicle tracking control will be installed at the two entrance locations to the site, off Mesa Ridge Parkway after paving and Peaceful Valley Road. If pavement does not exist on Mesa Ridge Parkway at the entrance, the vehicle tracking control will be placed at the location where pavement ends on Mesa Ridge Parkway. Rough-cut street control shall be used on all roadway excavations. Erosion control blankets will be used to stabilize slopes in excess of 3 to 1. A concrete washout area is anticipated and will be sited by the contractor.

For The Widefield Commercial Center Subdivision Filing No. 1 project, three existing temporary sediment basins will be left intact. Silt fencing will be used along the bottom portions of the existing sediment basins in the southwest portion of the site, as well as along the bottom portion of the existing detention basin in the northwest portion of the site. Vehicle tracking control will be installed at the entrance location to the site off Wayfarer Drive. Surface roughening will be used on the fill slopes of 3.75:1. An erosion control blanket as well as sediment control logs will be used to stabilize the proposed swale adjacent to Powers Boulevard.

2. Non-structural practices for erosion and sediment control to be used to minimize erosion and sediment transport are:

   Minimize the amount of existing vegetation to be removed during construction, leaving native vegetation in place when possible. If possible, leave existing ground cover, including asphalt in place or remove just prior to grading to minimize the length of soil exposure.

3. Phased BMP Implementation:

   Rice and Rice Inc. has been chosen to be the Contractor for Phase I, with Craig A. Cross as the Construction Coordinator. At this time, it is unknown when the construction of Phases II and III of the project will occur as the local economy will drive demand for home construction and lot preparation. The project schedules as determined by the Contractor and the Construction Coordinator are placed in Appendix 7 and will be updated as needed.

The The Glen at Widefield East project will likely be constructed in three phases starting with the southerly phase first and progressing northward approximately as follows:

a. Strip a 20 acre area in southwest area 1, piling roughly 9,495 CY of stripping's, while also stripping a fill area of 10 acres in the northeast portion of the site. Start to over excavate in southwest area 1 (103,661 CY) and placing this material in the northeast fill area.

b. Strip southwest area 3 of 10 acres and pile 5,210 CY, then cut southwest area 3 (195,216 CY) and place in the over excavated/fill portion in southwest area 1. There will be 33,227 CY of cut left in southwest area 3, which will go to the northeast fill area.

c. Strip southwest area 2 (10,852 CY) and place directly on southwest areas 1 & 3.

d. Strip another 10 acres (4,000 CY) of fill in the northeast area, placing this directly onto the northeast fill area 1. Over excavate southwest area 2 (129,413 CY) placing it in the northeast area 2.

e. Strip southwest area 4 (4,140 CY) and pile opening more cut. Cut in southwest area 4 hauling the over excavated cut (183,845 CY) to the fill area getting it to grade in southwest area 2 fill, which will leave 63,033 CY left to finish southwest area 2 fill. This will be accomplished with cut from southwest area 2.

f. Strip northwest area of 10,852 CY and place directly on lots in southwest area 2 to complete that area, along with piling another 8,243 CY. The northwest area over excavation of 53,349 CY can be placed in northwest area fills completing the over excavation in this area.

g. Strip southwest area 5 cut (10,840 CY.) and pile these stripping's. The southwest area *5* cut (172,306 CY) will be hauled to the northwest area, completing the northwest area. The southwest area 5 cut area will have 91,411 CY of cut left, 49,597 CY of this cut will go into southwest area *5* fills completing this fill area. There will be 41,814 CY left in southwest area 5, which will be hauled to the northeast fill area's completing southwest area 5.

h. Place piled topsoil in various locations to complete the grading.

All phases will be constructed in generally the same manner starting with minimal clearing and grubbing before installation of silt fence perimeter control followed by installation of vehicle tracking control and construction of the temporary sedimentation basins prior to major earthwork. As stormwater pipes and inlets are installed, inlet protection will be installed immediately. As soon as 3:1 fill slopes are placed, straw bale barriers, diversion dikes and temporary slope drains will be installed to manage stormwater flowing over or from newly

graded slopes. Seeding and mulching shall take place at the earliest time possible. Each phase will likely have its own concrete washout and staging area.

In the event that overlot and rough street grading are completed and final stabilization procedures are not met, rough-cut street control will be applied to unfinished roadways and interim seeding and mulching will be applied.

4. Materials handling and spill prevention:

   The site superintendent will inspect daily to ensure proper use and disposal of materials on-site including building materials, paints, solvents, fertilizers, chemicals, waste materials and equipment maintenance or fueling procedures. All materials stored on-site will be stored in a neat and orderly manner in the original containers with the original manufacturer's label, and if possible under a roof or other enclosure. Before disposing of the container, all of a product will be used up whenever possible and manufacture's recommendations for proper disposal will be followed according to state and local regulations.

   Material and equipment necessary for spill cleanup will be kept in the material storage area on-site. Manufacturer's recommendations for spill cleanup will be posted and site personnel will be made aware of the procedures along with the location of the information and cleanup supplies.

5. Concrete and asphalt batch plants:

   Dedicated concrete or asphalt batch plants is unknown.

6. Vehicle tracking control:

   Off-site vehicle tracking of sediment shall be minimized and is as shown on the SWMP Site Maps. Streets shall be kept clean and free of mud, soil and construction waste. Street sweeping or other acceptable methods shall be used to prevent sediment from being washed from the project site. Streets shall not be washed down with water. Street cleaning operations shall occur if necessary or as directed by El Paso County.

7. Waste management and disposal including concrete washout:

   A concrete washout area shall be specified in a location near concrete work areas. Concrete wash water shall not be discharged to state waters or to storm sewer systems. The washout area shall be a shallow excavation with a small perimeter berm to isolate concrete truck washout operations. At the end of construction, all concrete shall be removed from the site and

disposed of at an approved waste site. Signs shall be placed at the washout to clearly indicate the concrete washout area to operators of concrete trucks and pump rigs.

All construction site waste both liquid and solid must be contained in approved waste containers and disposed of off-site according to state and local regulations. Locations are unknown at this time but will be shown on the SWMP Site Map when determined. Portable sanitary facilities shall be provided at the site throughout the construction phase and must comply with state and local sanitary or septic system.

8. Groundwater and stormwater dewatering:

   Groundwater and/or stormwater dewatering is not anticipated on this site. If groundwater or stormwater dewatering is required, locations and practices to be implemented to control stormwater pollution from excavations, etc. will be noted on the SWMP Site Map. A separate CDPHE discharge permit maybe required for groundwater dewatering.

IV. FINAL STABILIZATION AND LONG TERM STORMWATER MANAGEMENT

Final stabilization is anticipated to occur during Summer 2019. Final stabilization is reached when all soil disturbing activities at the site have been completed and uniform vegetative cover has been established with a density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reductions have been employed. For the purposes of the SWMP, establishment of a vegetative cover capable of providing erosion control equivalent to pre-existing conditions at the site can be considered final stabilization. The contractor will be responsible for providing the documentation to make this comparison to the State of Colorado, Water Quality Control Division.

The project site shall be seeded with the seed mix as shown on the SWMP Site Plan, where the application methods and soil preparations are also found. All slopes greater than three-to-one will be covered with erosion control blankets.

Management of storm water after completion of construction will be accomplished by utilizing the practices listed below.

- Upon completion of construction, the site shall be inspected to ensure that all equipment, waste materials and debris have been removed.
- The site will be inspected to make certain that all graded surfaces have been paved, landscaped or seeded with an appropriate ground cover.

- All silt fence, inlet protection, sediment logs, curb socks and all other control practices & measures that are to remain after completion of construction will be inspected to ensure their proper functioning.
- The contractor shall remove erosion control measures that are not required to remain.

After all construction activities are completed on the site, but final stabilization has not been achieved, the contractor shall make a thorough inspection of the stormwater management system at least once every month.

The contractor shall be responsible for maintaining the storm water controls in good working order and shall also be responsible for the costs incurred until such time as final stabilization is reached. Once final stabilization has been achieved the contractor shall be responsible for removal of the erosion control measures.

Should any of the erosion control facilities become in disrepair prior to the establishment of the native or natural erosion control measures, the Contractor is responsible for the cost of such maintenance. The Contractor is also responsible for the cleanup of offsite areas affected by any sediment that may leave the site. Control of erosion from areas disturbed by utility or building construction will be the responsibility of the respective contractor. All erosion control measures shown on the plan shall be installed and maintained in accordance with Best Management Practices.

V. RECOMMENDED INSPECTION AND MAINTENANCE PROCEDURES

A. Minimum Inspection Schedule

a) **Frequency**. Contractor should inspect Construction BMP's at the following times and intervals.

(1) After installation of any Construction BMP;

(2) Within 24 hours after any runoff event that causes erosion;

(3) At least once every 14 days, but a more frequent inspection schedule may be necessary to ensure that BMPs continue to operate as needed to comply with the permit.

(4) Consult Permit No. COR-030000 for alternate inspection requirements at temporarily idle sites, at completed sites, or for winter conditions.

b) **Inspection Log**. The SWMP Administrator should record the inspection results on a site-specific standardized inspection log to be maintained and kept at the offices of Widefield Homes for review by agencies, until 30 days after completion of land disturbances. A

template for the inspection log format is included in Appendix 3. The SWMP Administrator should develop site-specific inspection logs that itemize the selected Construction BMP's for their site. At a minimum the following information from each inspection should be recorded on the site-specific log:

(1) Date of inspection;

(2) Name and title of inspector;

(3) Location(s) of discharges of sediment or other pollutants from the site;

(4) Location(s) of BMPs that need to be maintained;

(5) Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;

(6) Location(s) where additional BMPs are needed that were not in place at the time of inspection;

(7) Deviations from the minimum inspection schedule as provided in the permit;

(8) Descriptions of corrective actions for any item above, date(s) of corrective actions taken, and measures taken to prevent future violations, including requisite changes to the SWMP, as necessary and

(9) After corrective action(s) have been taken, or where a report does not identify any incidents requiring corrective actions, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

(10)

B. BMP Operation and Maintenance.

The SWMP Administrator is responsible for operation and maintenance of construction BMPs. The SWMP Administrator will inspect the site per inspection and monitoring protocol outlined above and will make any necessary repairs to construction BMPs immediately after a defect or other need for repair is discovered. The project site and the adjacent streets impacted by the construction shall be kept neat, clean and free of debris. The erosion control measures and facilities will be maintained in good working order until final stabilization. Any items that are not functioning properly or are inadequate will be promptly repaired or upgraded. Records of inspections must be kept and be available for review by the State of Colorado Water Quality Control Division or El Paso County.

REFERENCES

The following reports and plans were used in the process of preparing this Stormwater Management Plan:

1. *CDPS General Permit: Stormwater Discharges Associated with Construction Activity Permit No. COR-030000.* Colorado Department of Public Health and Environment. March 7, 2012.
2. *Preliminary Drainage Report, The Glen at Widefield East,* Kiowa Engineering Corporation, June 15, 2015.
3. *Final Drainage Report The Glen at Widefield Filing No. 7,* Kiowa Engineering Corporation, June 15, 2015.
4. *Erosion Control and Stormwater Quality Guide. Colorado Department of Transportation. 1995.*
5. *West Fork Jimmy Camp Creek Drainage Basin Planning Study.* Kiowa Engineering Corporation. October 2003.
6. *City of Colorado Springs and El Paso County Drainage Criteria Manual.* May 2014.
7. *City of Colorado Springs Drainage Criteria Manual Volume 2.* May 2014.
8. *Soil Survey of El Paso County Area, Colorado,* prepared by United States Department of Agriculture Soil Conservation Service. June 1981.
9. *FIRM Flood Insurance Rate Map Numbers 08041C0956F and 08041C0957F.* Federal Emergency Management Agency. March 17, 1997.
10. *Geologic Hazards Evaluation & Preliminary Geotechnical Investigation for The Glen at Widefield East, Colorado Springs Colorado.* STE, Inc. updated 2015.
11. *U.S.G.S. 7.5-minute Fountain Quadrangle Map. El Paso County, Colorado.* 1981. U. S. Department of the Interior. 2013.

APPENDIX 1

SWMP Application

STATE OF COLORADO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
Dedicated to protecting and improving the health and environment of the people of Colorado

Water Quality Control Division
4300 Cherry Creek Drive South
WQCD-WQPS-B2
Denver, CO 80246-1530
(303) 692– 3500 www.coloradowaterpermits.com

For Agency Use Only
Permit Number Assigned
COR03-_____
Date Received ____/____/____

COLORADO DISCHARGE PERMIT SYSTEM (CDPS)

STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES APPLICATION

PHOTO COPIES, FAXED COPIES, PDF COPIES OR EMAILS WILL NOT BE ACCEPTED.

Please print or type. Original signatures are required.
All items must be completed accurately and in their entirety for the application to be deemed complete. Incomplete applications will not be processed until all information is received which will ultimately delay the issuance of a permit. If more space is required to answer any question, please attach additional sheets to the application form. Applications must be submitted by mail or hand delivered to:

Colorado Department of Public Health and Environment
Water Quality Control Division
4300 Cherry Creek Drive South
WQCD-WQPS-B2
Denver, CO 80246-1530

Any additional information that you would like the Division to consider in developing the permit should be provided with the application. Examples include effluent data and/or modeling and planned pollutant removal strategies.

HOW TO COMPLETE THIS APPLICATION

1. Online via web browser. You must use Internet Explorer (version 8 and above). All other browsers disable the electronic submission features.
OR
2. Download and save this form to your computer. Then open Adobe Reader (or Acrobat), select File, then Open and navigate to where the form is saved. This is the best option if using a Mac computer (Do not use the Mac Preview program).

PERMIT INFORMATION

Reason for Application: ☑ NEW CERT ☐ RENEW CERT EXISTING CERTN _____

Applicant is: ☑ Property Owner ☐ Contractor/Operator

A. CONTACT INFORMATION—NOT ALL CONTACTS MAY APPLY *indicates required

*** PERMITTEE (if more than one please add additional pages)**

*** ORGANIZATION FORMAL NAME:** Glen Development Company

1) * PERMITTEE CONTACT the person authorized to sign and certify the permit application.
This person receives all permit correspondences and is the person responsible for ensuring compliance with the permit.

Responsible Person (Title): President

Currently Held By (Person): FirstName: J Mark LastName: Watson

Telephone: 719 392-0194 Email Address: typeacbear@aol.com

Organization: Glen Development Company

Mailing Address: 3 Widefield Blvd

City: Colorado Springs State: CO Zip Code: 80911

This form must be signed by the Permittee (listed in item 1) to be considered complete.
Per Regulation 61 In all cases, it shall be signed as follows:

In the case of corporations, by a responsible corporate officer. For the purposes of this section, the responsible corporate officer is responsible for the overall operation of the facility from which the discharge described in the application originates.
In the case of a partnership, by a general partner.
In the case of a sole proprietorship, by the proprietor.
In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official.

2) **DMR COGNIZANT OFFICIAL (i.e. authorized agent)** the person or position authorized to sign and certify reports required by the Division including Discharge Monitoring Reports *DMR's, Annual Reports, Compliance Schedule submittals, and other information requested by the Division. The Division will transmit pre-printed reports (ie. DMR's) to this person. If more than one, please add additional pages.

☑ Same as 1) Permittee

Responsible Person (Title): President

Currently Held By (Person): FirstName: J Mark LastName: Watson

Telephone: 719 392-0194 Email Address: typeacbear@aol.com

Organization: Glen Development Company

Mailing Address: 3 Widefield Blvd

City: Colorado Springs State: CO Zip Code: 80911

Per Regulation 61 ; All reports required by permits, and other information requested by the Division shall be signed by the permittee or by a duly authorized representative of that person. A person is a duly authorized representative only if:

i. **The authorization is made in writing by the permittee.**

ii. **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**

iii. **The written authorization is submitted to the Division.**

3) ***SITE CONTACT** local contact for questions relating to the facility & discharge authorized by this permit

☐ Same as 1) Permittee

Responsible Person (Title): Construction Manager

Currently Held By (Person): FirstName: Rudy LastName: Cross

Telephone: 719 338-3392 Email Address: rulocro@comcast.net

Organization: Cross Company

Mailing Address: 3140 Shadybrook Lane

City: Colorado Springs State: CO Zip Code: 80904

4) ***BILLING CONTACT** if different than the permittee.

☑ Same as 1) Permittee

Responsible Person (Title): President

Currently Held By (Person): FirstName: J Mark LastName: Watson

Telephone: 719 392-0194 Email Address: typeacbear@aol.com

Organization: Glen Development Company

Mailing Address: 3 Widefield Blvd

City: Colorado Springs State: CO Zip Code: 80911

5) **OTHER CONTACT TYPES (check below) Add pages if necessary:**

Responsible Person (Title): _____

Currently Held By (Person): _____ LastName: _____

Telephone: _____ Email Address: _____

Organization: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

- ☐ Pretreatment Coordinator
- ☐ Property Owner
- ☐ Compliance Contact
- ☐ Environmental Contact
- ☐ Inspection Facility Contact
- ☐ Stormwater MS4 Responsible Person
- ☐ Biosolids Responsible Party
- ☐ Consultant
- ☐ Stormwater Authorized Representative
- ☐ Other: _____

B) **PERMITTED PROJECT/FACILITY INFORMATION**

Project/Facility Name: The Glen at Widefield East

Street Address or Cross Streets: Mesa Ridge Parkway & Spring Glen Drive

(e.g., "S. of Park St. between 5th Ave. and 10th Ave.", or "W. side of C.R. 21, 3.25 miles N. of Hwy 10"; A street name without an address, intersection, mile marker, or other identifying information describing the location of the project is not adequate. For linear projects, the route of the project should be described as best as possible with the location more accurately indicated by a map.)

City: Colorado Springs Zip Code: 80911 County: El Paso

Facility Latitude/Longitude - (approximate center of site to nearest 15 seconds using one of the following formats)

☑ Decimal Degrees

OR 001A Latitude 38 . 7222 (Degrees (to 3 decimal places)) 001A Longitude -104 . 6592 (Degrees (to 3 decimal places)) (e.g., 39.703°, 104.933°)

☐ Degrees, Minutes, Seconds

001A Latitude ____ ° ____ ' ____ " (Degrees, Minutes, Seconds) 001A Longitude ____ ° ____ ' ____ " (Degrees, Minutes, Seconds) e.g., 39°46'11"N, 104°53'11"W

For the approximate center point of the property, to the nearest 15 seconds. The latitude and longitude must be provided as either degrees, minutes, and seconds, or in decimal degrees with three decimal places. This information may be obtained from a variety of sources, including:

- Surveyors or engineers for the project should have, or be able to calculate, this information.
- EPA maintains a web-based siting tool as part of their Toxic Release Inventory program that uses interactive maps and aerial photography to help users get latitude and longitude. The siting tool can be accessed at www.epa.gov/tri/report/siting_tool/index.htm
- U.S. Geological Survey topographical map(s), available at area map stores.
- Using a Global Positioning System (GPS) unit to obtain a direct reading.

Note: the latitude/longitude required above is not the directional degrees, minutes, and seconds provided on a site legal description to define property boundaries.

C) **MAP (Attachment) If no map is submitted, the permit will not be issued Facility Information**

Map: Attach a map that indicates the site location and that CLEARLY shows the boundaries of the area that will be disturbed. Maps must be no larger than 11x17 inches.

D) **LEGAL DESCRIPTION**

Legal description: If subdivided, provide the legal description below, or indicate that it is not applicable (do not supply Township/Range/Section or metes and bounds description of site)

Subdivision(s): _____ Lot(s): _____ Block(s) _____

OR ☑ Not applicable (site has not been subdivided)

E) AREA OF CONSTRUCTION SITE

Total area of project site (Acres) 245.4 Area of project site to undergo disturbance (Acres) 172.8

Note: aside from clearing, grading and excavation activities, disturbed areas also include areas receiving overburden (e.g., stockpiles), demolition areas, and areas with heavy equipment/vehicle traffic and storage that disturb existing vegetative cover

Total disturbed area of Larger Common Plan of Development or Sale, if applicable: na

(i.e., total, including all phases, filings, lots, and infrastructure not covered by this application)

Provide both the total area of the construction site, and the area that will undergo disturbance, in acres. **Note:** aside from clearing, grading and excavation activities, disturbed areas also include areas receiving overburden (e.g., stockpiles), demolition areas, and areas with heavy equipment/vehicle traffic and storage that disturb existing vegetative cover (see construction activity description under the APPLICABILITY section on page 1). If the project is part of a larger common plan of development or sale (see the definition under the APPLICABILITY section on page 1), the disturbed area of the total plan must also be included.

F) NATURE OF CONSTRUCTION ACTIVITY

Check the appropriate box(s) or provide a brief description that indicates the general nature of the construction activities. (The full description of activities must be included in the Stormwater Management Plan.)

- [x] Single Family Residential Development
- [ ] Multi-Family Residential Development
- [ ] Commercial Development
- [ ] Oil and Gas Production and/or Exploration (including pad sites and associated infrastructure)
- [ ] Highway/Road Development (not including roadways associated with commercial or residential development)
- [ ] Other—Description:

G) ANTICIPATED CONSTRUCTION SCHEDULE

Construction Start Date: Feb. 15, 2016 Final Stabilization Date: Autumn 2019

- *Construction Start Date* - This is the day you expect to begin ground disturbing activities, including grubbing, stockpiling, excavating, demolition, and grading activities.
- *Final Stabilization Date* - In terms of permit coverage, this is when the site is finally stabilized. This means that all ground surface disturbing activities at the site have been completed, and all disturbed areas have been either built on, paved, or a uniform vegetative cover has been established with an individual plant density of at least 70 percent of pre-disturbance levels. Permit coverage must be maintained until the site is finally stabilized. Even if you are only doing one part of the project, the estimated final stabilization date must be for the overall project. If permit coverage is still required once your part is completed, the permit certification may be transferred or reassigned to a new responsible entity(s).

H) RECEIVING WATERS (If discharge is to a ditch or storm sewer, include the name of the ultimate receiving waters)

Immediate Receiving Water(s): West Fork Jimmy Camp Creek

Ultimate Receiving Water(s): Jimmy Camp Creek/Fountain Creek

Identify the receiving water of the stormwater from your site. Receiving waters are any waters of the State of Colorado. This includes all water courses, even if they are usually dry. If stormwater from the construction site enters a ditch or storm sewer system, identify that system and indicate the ultimate receiving water for the ditch or storm sewer. **Note:** a stormwater discharge permit does not allow a discharge into a ditch or storm sewer system without the approval of the owner/ operator of that system.

I) SIGNATURE PAGE

1. You may print and sign this document and mail the hard copy to the State along with required documents.

OR

2. Electronic Submission Signature

You may choose to submit your application electronically, along with required attachments. To do so, click the SUBMIT button below which will direct you, via e-mail , to sign the document electronically using the DocuSign Electronic Signature process. Once complete, you will receive, again via e-mail, an electronically stamped Adobe pdf of this application. Print the signature page from the electronically stamped pdf, sign it and mail it to the WQCD Permits Section to complete the application process (address is on page 1 of the application).

- The Division encourages use of the electronic submission of the application and electronic signature. This method meets signature requirements as required by the State of Colorado.
- The ink signed copy of the electronically stamped pdf signature page is also required. This requirement meets Federal EPA Requirements.

Processing of the application will begin with the receipt of the valid electronic signature.

☑ STORMWATER MANAGEMENT PLAN CERTIFICATION

"I certify under penalty of law that a complete Stormwater Management Plan, as described in Appendix B of this application, has been prepared for my activity. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the Stormwater Management Plan is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for falsely certifying the completion of said SWMP, including the possibility of fine and imprisonment for knowing violations."

"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 gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or these 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."
"I understand that submittal of this application is for coverage under the State of Colorado General Permit for Stormwater Discharges Associated with Construction Activity for the entirety of the construction site/project described and applied for, until such time as the application is amended or the certification is transferred, inactivated, or expired." [Reg 61.4(1)(h)]

For Docusign Electronic Signature _____ Ink Signature _____ Date: 1/26/16

Signature of Legally Responsible Person or Authorized Agent (submission must include original signature)

J Mark Watson — President

Name (printed) — Title

This form must be signed by the Permittee to be considered complete. Per Regulation 61 In all cases, it shall be signed as follows:

a) In the case of corporations, by a responsible corporate officer. For the purposes of this section, the responsible corporate officer is responsible for the over all operation of the facility from which the discharge described in the application originates.
b) In the case of a partnership, by a general partner.
c) In the case of a sole proprietorship, by the proprietor.
d) In the case of a municipal, state, or other public facility, by either a principal executive officer or ranking elected official

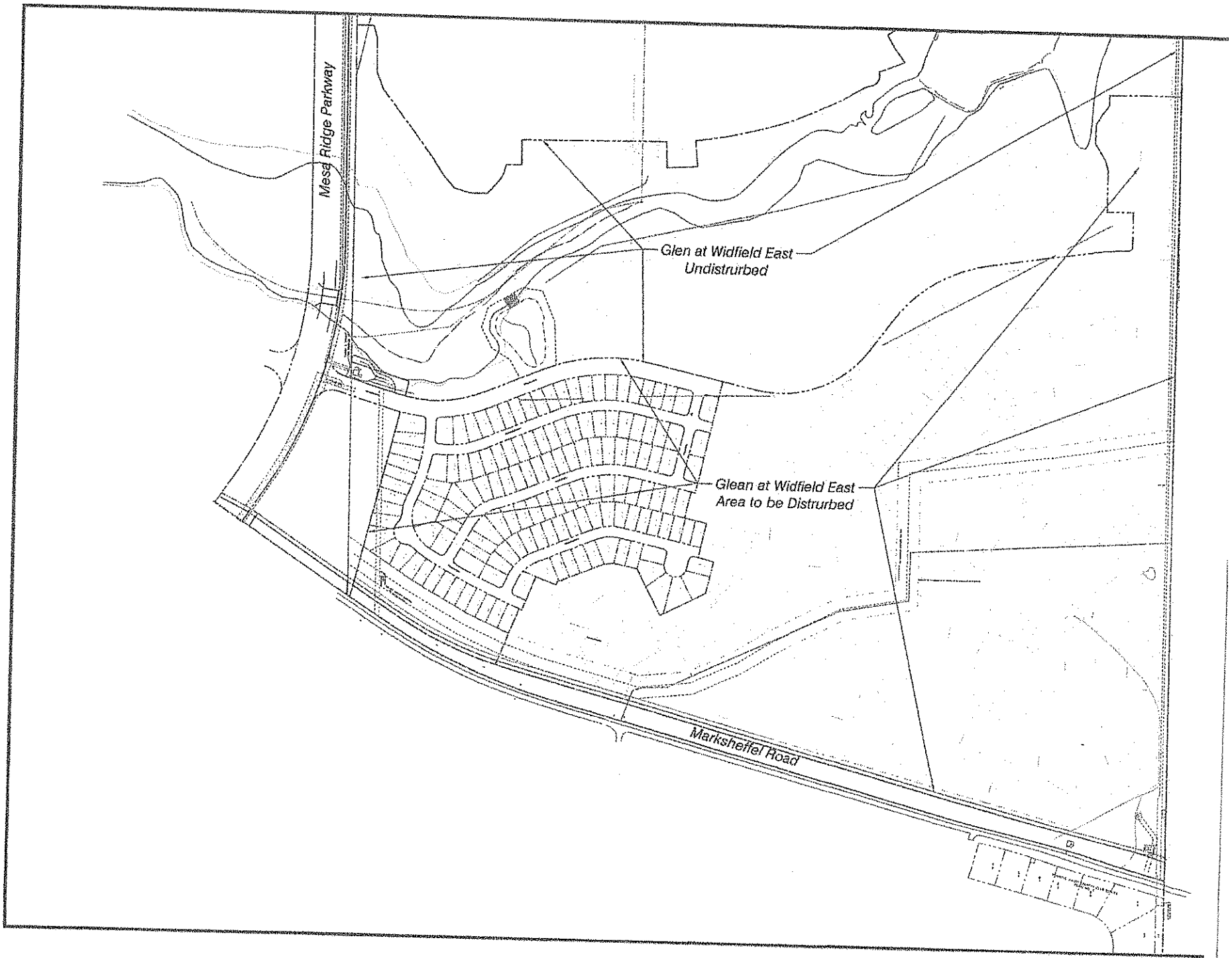
3rd Party Preparer: If this form was prepared by an authorized agent on behalf of the Permittee, please complete the fields below.

E. Klein — eklein@kiowaengineering.com

Preparer Name (printed) — Email Address

DO NOT INCLUDE A COPY OF THE STORMWATER MANAGEMENT PLAN
DO NOT INCLUDE PAYMENT—AN INVOICE WILL BE SENT AFTER THE CERTIFICATION IS ISSUED.

	Attach Map
	Attach File
	Attach File
	Attach File
	Attach File


Mesa Ridge Parkway
Glen at Widfield East
Undistrurbed
Glean at Widfield East
Area to be Distrurbed
Marksheffel Road

APPENDIX 2

Construction Activity Stormwater Permit

COLORADO
Department of Public Health & Environment

CERTIFICATION TO DISCHARGE UNDER CDPS GENERAL PERMIT COR-0300000 STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Certification Number: COR030949

This Certification to Discharge specifically authorizes:

Glen Development Co
to discharge stormwater from the facility identified as

Glen at Widefield E

To the waters of the State of Colorado, including, but not limited to:

West Fork Jimmy Camp Creek- Jimmy Camp Creek

Facility Industrial Activity : Single family residence

Facility Located at: Mesa Ridge Pkwy and Spring Glen Dr Colorado Springs CO 80911
El Paso County
Latitude 38.726197 Longitude -104.681097

Specific Information (if applicable):

Certification is issued and effective: 2/10/2016
Expiration Date: This authorization expires upon effective date of the General Permit COR030000 renewal unless otherwise notified by the division.

*ADMINISTRATIVELY CONTINUED

This certification under the permit requires that specific actions be performed at designated times. The certification holder is legally obligated to comply with all terms and conditions of the permit.

This certification was approved by:
Lillian Gonzalez, Unit Manager
Permits Section
Water Quality Control Division

*explanation of Admin Continued in cover letter

XFINITY Connect

rulocro@comcast.ne

+ Font Size -

FW: Permit Application Received

From : Ryan Watson <ryan@widefieldinvestmentgroup.com> Wed, Feb 17, 2016 01:11 PM

Subject : FW: Permit Application Received

To : rulocro@comcast.net

FYI

-----Original Message-----
From: SQL Service on VS90 (DO NOT REPLY) [mailto:dphevs90mail@state.co.us]
Sent: Wednesday, February 17, 2016 1:06 PM
To: ryan@widefieldinvestmentgroup.com
Subject: Permit Application Received

Colorado Department of Public Health and Environment
Air Pollution Control Division
Stationary Sources Program

A construction permit application was received by the Air Pollution Control Division (the Division) on 01/28/2016 and has been logged in to the Division's permit tracking system. The permit and AIRS ID number assignments are as follows:

PERMIT	AIRS ID	FACILITY
GP03	042/0233/001	GLEN DEVELOPMENT COMPANY - THE GLEN

Point Description: LAND DEVELOPMENT

If you should have any questions concerning the status of your permit application, please contact Aaron Moseley at (303)692-3242 or aaron.moseley@state.co.us. When calling, please reference the permit and/or AIRS ID number(s) listed above. You can also research the status of your application online at https://www.colorado.gov/pacific/cdphe/air-permit-status . Please note that the status of general permit applications will not be reflected on the Division's website; conditional coverage under the relevant general permit is effective on the date that a complete application is received by the Division.

The next step in processing your construction permit application is to determine if all of the information we need is contained within your application. If so, we will begin our preliminary engineering analysis. If any information is missing, however, we will contact you in the near future to obtain the needed material.

State law requires that the Division determine the completeness of an application within 60 days of receipt. If you do not hear from the Division by 03/28/2016, you can assume that your application is complete.

STATE OF COLORADO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
Water Quality Control Division

CDPS GENERAL PERMIT COR900000

FOR
STORMWATER DISCHARGES ASSOCIATED WITH NON-EXTRACTIVE INDUSTRIAL ACTIVITY

COLORADO DISCHARGE PERMIT SYSTEM

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended), owners or operators of stormwater discharges associated with non-extractive industrial activity, as defined in this permit, are authorized to discharge from authorized locations throughout the State of Colorado to specified surface waters of the state, in accordance with the eligibility and permit application requirements, effluent limitations, monitoring requirements, inspection requirements, and other conditions set forth in this general permit.

This permit is organized as follows:

Part I (A-L)	Requirements applicable to all Industrial Sectors
Part II	Standard Terms and Conditions
Part III	Sector-Specific Requirements for Industrial Activity
Appendix A	Facilities and Activities Covered
Appendix B	Information Summaries
Appendix C	Definitions and Abbreviations

The applicant may demand an adjudicatory hearing within thirty (30) days of the date of issuance of the final permit determination, per the Colorado Discharge Permit System Regulations, 61.7(1). Should the applicant choose to contest any of the effluent limitations, monitoring requirements or other conditions contained herein, the applicant must comply with Section 24-4-104 CRS and the Colorado Discharge Permit System Regulations. Failure to contest any such effluent limitation, monitoring requirement, or other condition, constitutes consent to the condition by the Applicant.

This permit and the authorization to discharge shall expire at midnight, **June 30, 2017**.

Issued and Signed this **7th** day of **March, 2012**

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Janet Kieler, Permits Section Manager
Water Quality Control Division

ISSUED AND SIGNED: March 7, 2012

EFFECTIVE DATE OF PERMIT: July 1, 2012

TABLE OF CONTENTS

PART I

A. COVERAGE UNDER THIS PERMIT

1. Facilities Covered

Facilities eligible to discharge under this permit are those that discharge stormwater associated with non-extractive industrial activity listed in Parts I.A.1.a. and b., below.

a. Allowable Stormwater Discharges
Unless otherwise made ineligible under Part I.A.2, the following discharges are eligible for coverage under this permit:

i) Stormwater discharges associated with industrial activity for any primary industrial activities and co-located industrial activities, as defined in Appendix C (Definitions and Abbreviations) and identified in Appendix A (Facilities and Activities covered), including those subject to any of the national stormwater-specific effluent limitation guidelines (ELGs) under 40 CFR Subchapter N listed in Table A-1 below:

Table A-1. Stormwater-specific Effluent Limitations Guidelines

Regulated Activity	40 CFR Part/Subpart	Industrial Sector	Effluent Limit
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Part 418, Subpart A	C	See Part III.C.4
Runoff from asphalt emulsion facilities	Part 443, Subpart A	D	See Part III.D.4
Runoff from material storage piles at cement manufacturing facilities	Part 411, Subpart C	E	See Part III.E.5
Runoff from hazardous waste landfills	Part 445, Subpart A	K	See Part III.K.6
Runoff from non-hazardous waste landfills	Part 445, Subpart B	L	See Part III.L.10
Runoff from coal storage piles at steam electric generating facilities	Part 423	O	See Part III.O.8

ii) Stormwater discharges designated by the Water Quality Control Division (the Division) as needing a stormwater permit because the discharge:

a) contributes to a violation of a water quality standard; or
b) is a significant contributor of pollutants to waters of the state.

Such stormwater discharges are eligible for coverage under Sector AD of this permit.

iii) Discharges that are not otherwise required to obtain permit authorization but are commingled with stormwater discharges that are authorized under this permit.

iv) Stormwater run-on that commingles with stormwater discharges associated with industrial activity.

v) Stormwater discharges subject to any New Source Performance Standards (NSPS).

b. Allowable Non-Stormwater Discharges.
The following non-stormwater discharges are authorized by this permit provided that appropriate control measures are implemented to minimize erosion and sediment transport resulting from such discharges, and the non-stormwater component(s) of the discharge and the control measure(s) used are identified in the SWMP (see Part I.F SWMP—Specific SWMP Requirements):

i) Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;

ii) Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;

iii) Uncontaminated spring water;

iv) Foundation or footing drains where flows are not contaminated with process materials; and

v) Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown or drains).

vi) Discharges from wet deck storage areas, which are authorized only if no chemical additives are used in the spray water or applied to the logs, subject to the national ELG listed in Table A-2 below:

Table A-2. Effluent Limitations Guideline			
Regulated Activity	**40 CFR Part/Subpart**	**Industrial Sector**	**Effluent Limit**
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas.	Part 429, Subpart I	A	See Part III.A.7

c. Emergency Fire Fighting
Discharges resulting from emergency fire fighting activities are authorized by this permit.

2. **Limitations on Coverage**

This permit does not authorize the discharges or activities listed below. Permittees may seek individual or alternate general permit coverage for such discharges, as appropriate and available.

a. Discharges of non-stormwater.
Discharges of non-stormwater, except those authorized non-stormwater discharges listed in Part I.A.1.b, are not eligible for coverage under this permit.

b. Stormwater Discharges Associated with Construction Activity.
Stormwater discharges associated with construction activity disturbing one acre or more are not eligible for coverage under this permit.

c. Discharges Currently Covered by Another Permit.
Discharges that are currently covered under an individual permit or an alternative general permit are not eligible for coverage under this permit.

d. Discharges Currently covered by a Division Low Risk Guidance document.
Discharges that meet the provisions of a Division Low Risk Guidance document permit are not eligible for coverage under this permit.

e. Stormwater Discharges Subject to Effluent Limitations Guidelines.
Discharges subject to stormwater effluent limitation guidelines (ELGs) under 40 CFR, Subchapter N other than those summarized in Part I.A.1, Tables A-1 and A-2 (see relevant sector-specific section(s) of Part III. for details) are not eligible for coverage under this permit, and must be covered under an alternate general permit or under an individual permit.

Stormwater discharges covered by this permit that are subject to ELGs that become effective after this permit is issued, may continue coverage under this permit.

f. Discharges to Waters Designated as Outstanding waters for Antidegradation Purposes.
Discharges to receiving waters designated as "outstanding waters" are not eligible for coverage under this permit.

3. **Obtaining and maintaining Authorization under this permit**

a. Application Requirements
To obtain authorization for stormwater discharges associated with industrial activities under this permit:

i) The applicant(s) must meet the eligibility requirements under Parts I.A.1 and I.A.2.

ii) The applicant(s) must develop a Stormwater Management Plan (SWMP) in accordance with the requirements of Part I.E and Part I.F of this permit prior to submitting an application to the Division.

iii) The applicant(s) must submit a complete, accurate, and signed permit application, on a form provided by the Division, by mail or hand delivery to the Division at least **90 days** before that facility commences industrial activity, which may result in a discharge of stormwater associated with that industrial activity. The application must be signed in accordance with the requirements of Part I.K (Reporting and Recordkeeping) of this permit. The complete application shall be submitted to:

Colorado Department of Public Health and Environment
Water Quality Control Division
Permits Section, WQCD-PCP-B2
4300 Cherry Creek Drive South
Denver, CO 80246

iv) The application must include certification that a SWMP has been completed.

v) The applicant(s) must receive written notification that the Division granted permit coverage.

b. Permit Certification Procedures
Following review of the application or other information, the Division may:

i) request such additional information as is reasonably necessary to evaluate the discharge;

ii) delay the authorization to discharge pending further review;

iii) notify the applicant that additional terms and conditions are necessary;

iv) provide a compliance schedule in the certification for sector-specific terms and conditions that are new or more stringent than previous conditions;

v) deny the authorization to discharge under this general permit.

In these instances, the Division will notify the applicant in writing of its request or determination.

c. Alternative permits

i) Division required alternate permit coverage: The Division may require an applicant or permittee to apply for an individual permit or an alternative general permit if it determines the discharge does not fall under the scope of this general permit. In this case, the Division will notify the applicant or permittee that a permit application is required.

ii) Permittee request for alternate permit coverage: A permittee authorized to discharge stormwater under this permit may request to be excluded from coverage under this general permit by applying for an individual permit. In this case, the permittee must submit an individual application, with reasons supporting the request, to the Division at least 180 days prior to any discharge. When an individual permit is issued, the permittee's authorization to discharge under this permit is terminated on the effective date of the individual permit.

d. Permit Expiration, and Continuation

Authorization to discharge under this general permit shall expire on **June 30, 2017**. A permittee desiring continued coverage under the general permit must reapply at least **180 days** in advance of this permit expiration. The Division will determine if the permittee may continue to discharge stormwater under the terms of the general permit. An individual permit may be required for any facility not reauthorized to discharge under the reissued general permit.

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued and remain in force and effect. For permittees that have applied for continued permit coverage, discharges authorized under this permit prior to the expiration date will automatically remain covered by this permit until the earliest of:

i) An authorization to discharge under a reissued permit, or a replacement of this permit, following the timely and appropriate submittal of a complete application requesting authorization to discharge under the new permit and compliance with the requirements of the new permit; or

ii) The issuance and effect of a termination issued by the Division; or

iii) The issuance or denial of an individual permit for the facility's discharges; or

iv) A formal permit decision by the Division not to reissue this general permit, at which time the Division will identify a reasonable time period for covered dischargers to seek coverage under an alternative general permit or an individual permit. Coverage under this permit will cease when coverage under another permit is granted/authorized; or

v) The Division has informed the permittee that discharges previously authorized under this permit are no longer covered under this permit.

4. **Permit Termination Procedures**

a. Submitting a Notice of Termination request
To terminate permit coverage, the permittee must submit a complete and accurate Notice of Termination form, signed by the permittee, to the Division at the address listed in Part I.A.3. The permittee's authorization to discharge under this permit terminates as notified by the Division.

A Notice of Termination request that does not meet one or more of the conditions identified in Part I.A.4.b below is not valid. The permittee is responsible for complying with the terms of this permit until notified by the Division that the authorization is terminated.

b. Conditions for a Notice of Termination
The Division may approve a Notice of Termination request when the permittee meets one of the following conditions:

i) All permitted stormwater discharges associated with industrial activity that are authorized by this permit cease because the industrial activity has ceased, and no significant materials or industrial pollutants remain exposed to stormwater.

ii) The permittee has obtained authorization under an individual or alternative general permit for all stormwater discharges associated with industrial activity.

iii) No Exposure Certification. If the facility authorized to discharge stormwater under this permit becomes eligible for a no exposure exclusion from permitting under 5 CCR 1002-61.3(2)(h), the permittee may submit a complete and accurate No Exposure Certification to the Division at the address listed in Part I.A.3. The Division will terminate permit coverage using information provided in the No Exposure Certification form; the permittee does not need to submit a Notice of Termination.

5. **Transfer of Permit Coverage**

Coverage under this general permit may be automatically transferred to a new discharger if all of the following conditions are met:

a. The permittee (existing discharger) and new discharger submit a complete and accurate Notice of Transfer form, signed by the permittee and the new legal entity, to the Division at the address listed in Part I.A.3, at least 30 days prior to the proposed transfer date. The Notice of Transfer form must contain a specific date for transfer of permit responsibility, coverage, and liability.

b. The type of industrial activities and practices remain substantially unchanged.

c. The Division does not notify the permittee of the need to submit a new application for coverage under the general permit or for an individual permit.

d. The Division does not notify the existing discharger and new discharger of its intent to revoke coverage under the general permit.

B. PERMIT COMPLIANCE

A permittee must comply with all the terms and conditions of this permit. Violation of the terms and conditions specified in this permit may be subject to civil and criminal liability pursuant to sections 25-8-601 through 612, C.R.S.. Correcting a permit violation does not remove the original violation. Failure to take any required corrective actions, as detailed in Part I.J (Corrective Actions), constitutes an independent, additional violation of this permit and may be subject to civil and criminal liability. However, where corrective action is triggered by an event that does not itself constitute permit noncompliance, such as an exceedance of an applicable benchmark, there is no permit violation unless the permittee fails to take the required corrective action within the relevant deadlines established in Part I.J (Corrective Actions).

C. CONTROL MEASURES

All control measures (as defined in Appendix C) used by the permittee to meet the effluent limitations contained in this permit must be selected, designed, installed, implemented, and maintained in accordance with good engineering hydrologic and pollution control practices as defined in Appendix C (Definitions and Abbreviations), and the manufacturer's specifications, when applicable.

The term "**Minimize**", for purposes of implementing control measures to meet the requirements of Part I.D—Effluent Limitations of this general permit, 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.

1. **Installation and implementation specifications**

Installation and implementation specifications for each control measure type used by the permittee to meet the effluent limitations contained in this permit, must be retained with the SWMP (see Part I.F SWMP – Specific SWMP Requirements).

2. **Maintenance of Control Measures and Associated Documentation**

a. The permittee must maintain all control measures used to achieve the effluent limits required by this permit in effective operating condition (see Part I.D – Effluent Limitations). For this permit, maintenance includes preventative and routine maintenance, modification, repair, replacement, or installation of new control measures. Observations resulting in maintenance activities can be made during a site inspection, or during general observations of site conditions.

b. Corrective actions associated with maintaining control measures must be conducted with due diligence, as soon as possible after the need is discovered, to achieve the effluent limits required by this permit. The permittee must implement interim control measures to achieve the effluent limits required by this permit while performing maintenance of the primary control measure.

c. The permittee shall document corrective actions associated with maintaining control measures, in accordance with Part. I.J (Corrective Actions) of this permit, and shall revise the facility SWMP to reflect replacement or installation of new control measures in accordance with Part I.E SWMP (General SWMP Requirements).

D. EFFLUENT LIMITATIONS

Effluent limitations contained in this permit include:

- practice-based effluent limits (Part I.D.1);
- numeric effluent limits based on effluent limitations guidelines (Part I.D.2); and,
- water quality-based effluent limitations (Part I.D.3).

All discharges authorized under this permit shall attain these effluent limitations, as applicable to the discharge.

1. **Practice-based Effluent Limitations**

Practice-based limitations required by this permit include the following:

a. Minimize Exposure
The permittee must minimize (as defined in Appendix C) the exposure of pollutant sources associated with manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff. Minimizing exposure may include locating these industrial materials and activities inside or protecting them with storm resistant coverings.

b. Good Housekeeping
The permittee must keep clean all areas exposed to stormwater runoff, as necessary to minimize potential sources of pollutants, using such measures as sweeping at regular intervals, keeping materials orderly and labeled, and storing materials in appropriate containers.

c. Maintenance of Control Measures
The permittee must maintain all control measures (structural and non-structural) used to achieve the effluent limits required by this permit in effective operating condition. The permittee must conduct maintenance of control measures in accordance with Part.I.C (Control Measures) of this permit.

d. Spill Prevention and Response Procedures
The permittee must minimize the potential for leaks, spills and other releases that may be exposed to stormwater and develop plans for effective response to such potential spills. The permittee must at minimum implement:

i) Procedures for regularly inspecting, testing, maintaining, and repairing all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in stormwater discharged to receiving waters.

ii) Procedures for plainly labeling containers that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;

iii) Preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, or procedures for material storage and handling;

iv) Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available; and

v) Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. Contact information must be in locations that are readily accessible and available.

e. Erosion and Sediment Controls
The permittee must stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Among other actions taken to meet this effluent limit, flow velocity dissipation devices must be placed at discharge locations and within outfall channels where necessary to minimize erosion and/or settle out pollutants.

f. Management of Runoff
The permittee must divert, infiltrate, reuse, contain, or treat stormwater runoff, in a manner that minimizes pollutants in stormwater discharges from the site.

g. Salt Storage Piles or Piles Containing Salt
The permittee must enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces, and implement appropriate measures to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered if stormwater runoff from the piles is not discharged or if discharges from the piles are authorized under another permit.

h. Sector Specific Practice-based Effluent Limits
The permittee must achieve any additional practice-based limits stipulated in the relevant sector-specific section(s) of Part III.

i. Employee Training
The permittee must develop and implement a training program for employees. Training must be conducted at least **annually**, and must address the following, as applicable to the trainee's activities: the site-specific control measures used to achieve the effluent limits in this Part, components and goals of the SWMP, monitoring and inspection procedures, and other applicable requirements of the permit. At a minimum, the following individuals must be trained:

i) Employee(s) overseeing implementation of, revising, and amending the SWMP.

ii) Employee(s) performing installation, inspection, maintenance, and repair of control measures.

iii) Employee(s) who work in areas of industrial activity subject to this permit.

iv) Employee(s) who conduct stormwater discharge monitoring required by Part.I.H and Part.I.I of this permit.

j. Non-Stormwater Discharges
The permittee must eliminate non-stormwater discharges not authorized by a permit, or conducted in accordance with a Division Low Risk Guidance document. See Part I.A.1.b for a list of non-stormwater discharges authorized by this permit.

k. Waste, Garbage and Floatable Debris
The permittee must minimize the discharge of waste, garbage, and floatable debris from the site by keeping exposed areas free of such materials or by intercepting them before they are discharged.

l. Dust Generation and Vehicle Tracking of Industrial Materials.
The permittee must minimize generation of dust and off-site tracking of raw, final, or waste materials.

2. **Numeric Effluent Limitations based on Effluent Limitations Guidelines**

Discharges from facilities in an industrial category subject to one of the effluent limitations guidelines identified in Part I.A.1, Tables A-1 and A-2 must meet the referenced effluent limits.

3. **Water Quality-Based Effluent Limitations**

a. Water Quality Standards
Discharges authorized under this permit must be controlled as necessary to meet applicable water quality standards.

The Division expects that compliance with the other conditions in this permit will control discharges as necessary to meet applicable water quality standards. If at any time the permittee becomes aware, or the Division determines, that the authorized discharge causes or contributes to an exceedance of applicable water quality standards, the permittee must take corrective action as required in Part I.J (Corrective Actions), document the corrective actions as required in Part I.J (Corrective Actions) and Part I.F (SWMP – Specific SWMP Requirements), and report the corrective actions to the Division as required Part I.J (Corrective Actions) and Part I.K (Reporting and Recordkeeping).

If information in the application, required reports, or from other sources indicates that compliance with the other terms and conditions of this permit will not control the discharge as necessary to meet applicable water quality standards, the Division may include a site specific water quality-based effluent limitation in the permit certification, or require the permittee to obtain coverage under an individual permit in accordance with Part I.A.3.c. The Division may include a compliance schedule for any new or revised water quality-based effluent limitation included in a permit certification as appropriate. The Division may also include additional terms and conditions in the permit certification to determine whether compliance with the remaining terms and conditions of the permit will control the discharge as necessary to meet applicable water quality standards, or to monitor compliance with a site-specific water quality-based effluent limitation.

b. Additional Requirements for Discharges to Water Quality Impaired Waters

i) **Existing** Discharge to an Impaired Water **with** an EPA Approved or Established TMDL. Where a pollutant and applicable water quality standard has been identified, the Division will apply the monitoring requirements of Part I.I.4 in the permit certification.

When the Division determines that compliance with the other terms and conditions of this permit will not control the discharge as necessary to be consistent with the assumptions and requirements of the TMDL, including any wasteload allocation for the facility, the Division will include a site specific water quality-based effluent limitation in accordance with Part I.D.3.a in the permit certification, or inform the

permittee if coverage under an individual permit is necessary in accordance with Part I.A.3.c. The Division may also include additional terms and conditions in the permit certification to determine whether the discharge is consistent with the assumptions and requirements of the TMDL, including any wasteload allocation for the facility and will apply the monitoring.

ii) **Existing** Discharge to an Impaired Water **without** an EPA Approved or Established TMDL. Where a pollutant and applicable water quality standard has been identified, the Division will apply the monitoring requirement of Part I.I.4 in the permit certification. Note that this provision also applies to situations where the Division determines that the discharge may need to be controlled as necessary to meet water quality standards in a downstream water segment, even if the discharge is to a receiving water that is not specifically identified on a Section 303(d) list.

iii) **New** Discharge to an Impaired Water. Where a pollutant and applicable water quality standard has been identified, the Division will make a determination whether the discharge has reasonable potential to cause or contribute to an exceedance of the applicable water quality standard for the identified pollutant. Where reasonable potential is determined, the Division will include a site specific water quality-based effluent limitation in accordance with Part I.D.3.a. The water quality-based effluent limitation will be narrative, and consistent with the following statement:

> Discharges authorized under this permit must be controlled as necessary to meet the applicable water quality standard for (*the subject pollutant*) at the point of discharge (end of pipe).

The Division will also apply the monitoring requirements of Part I.I.4 and as appropriate, site-specific benchmarks in accordance with Part I.I.2, in the permit certification.

c. Additional Requirements for Discharges to Waters Designated as Critical Habitat for Threatened and Endangered Species.

Where a pollutant and applicable water quality standard has been identified, the Division will apply the monitoring requirements of Part I.I.4 in the permit certification. The Division may also include additional terms and conditions in the permit certification to determine whether compliance with the remaining terms and conditions of the permit will control the discharge as necessary to eliminate or minimize the potential for no more than minor detrimental effects to listed species in regards to receiving water mixing (October 2005 Memorandum of Agreement (MOA) entered into by the Division, EPA, and USFWS).

d. Additional Requirements for New or Increased Discharges to Reviewable Waters

If the Division determines that compliance with the other terms and conditions of this permit will not control the discharge as necessary to be consistent with the applicable antidegradation requirements, the Division may include additional terms and conditions in accordance with Part I.D.3.a in the permit certification, or inform the permittee if coverage under an individual permit is necessary in accordance with Part I.A.3.c.

E. STORMWATER MANAGEMENT PLAN (SWMP)—General SWMP Requirements

The General SWMP requirements contained in this section address administrative requirements of the SWMP, as opposed to the specific SWMP content requirements provided in Part I.F of the permit.

An existing permittee authorized under the previous versions of this permit shall modify the existing SWMP to comply with the requirements of this permit within 90 days of the certification effective date.

1. SWMP requirement: The permittee must develop, implement, and maintain a SWMP for each facility authorized by this permit. The SWMP shall be prepared in accordance with good engineering, hydrologic and pollution control practices (the SWMP need not be prepared by a registered engineer). The permittee must modify the SWMP to reflect current site conditions (see Part I.E.7 below).

2. Preparation, Submission and Implementation: The permittee must complete a SWMP prior to submitting the permit application for authorization to discharge industrial stormwater from a facility, and submit it to the Division if requested. The permittee must implement the SWMP when the facility begins industrial activities, which includes installation of control measures.

3. Signatory Requirements: The permittee must sign and certify all SWMPs in accordance with Part I.K (Reports and Recordkeeping); this requirement applies to the original SWMP prepared for the facility, **and** each time the permittee modifies a SWMP as required by Part I.E.7.a and b below.

4. Permit Retention: The permittee must maintain a copy of this permit and the permit certification issued to the permittee with the SWMP.

5. SWMP Retention: The permittee must retain a copy of the SWMP at the facility unless another location, specified by the permittee, is approved by the Division.

6. Consistency with Other Plans: The permittee may incorporate, by reference, applicable portions of plans prepared for other purposes at their facility. Plans or portions of plans incorporated by reference into a SWMP become enforceable requirements of this permit and must be available along with the SWMP as required in Part.I.E.5 above.

7. Required SWMP Modifications:

   a. *Division initiated*:

      i) The permittee must modify the SWMP when notified by the Division that it does not meet one or more of the requirements of this permit. Unless otherwise provided by the Division, the permittee shall have 30 days after notification to make the necessary changes to the SWMP and implement them.

      ii) The Division may require the permittee to submit the modified SWMP to the Division.

      iii) If the Division determines that the permittee's stormwater discharges do not, or may not, achieve the effluent limits required by this permit, the Division may require the permittee, within a specified time period, to develop and implement a supplemental control measure action plan, which describes additional SWMP modifications to adequately address the identified water quality concerns.

   b. *Permittee initiated*:

      i) The permittee must modify the SWMP whenever necessary to address any of the triggering conditions for corrective action in Part I.J (Corrective Actions) to ensure that they do not reoccur.

      ii) The permittee must modify the SWMP whenever there is a change in design, construction, operation, or maintenance at the facility that significantly changes the nature of pollutants discharged in stormwater from the facility, significantly increases the quantity of pollutants discharged, or that requires the permittee to implement new or modified control measures.

      iii) The SWMP modifications may include a schedule for control measure design and implementation, provided that interim control measures needed to comply with the permit are documented in the SWMP and implemented during the design period.

      iv) The permittee must make all SWMP modifications in accordance with the corrective action deadlines in Part I.J (Corrective Actions).

8. Sector-specific requirements: The SWMP shall include any additional sector-specific requirements outlined in Part III.

F. STORMWATER MANAGEMENT PLAN (SWMP)—Specific SWMP Requirements

The SWMP shall contain the **ten elements** described in this section.

1. **SWMP Administrator**

The SWMP shall identify a specific individual(s) by name or by title whose responsibilities include: SWMP development, implementation, maintenance, and modification.

2. **Facility Description**

The facility description shall include:

a. A narrative description of the industrial activities conducted at the facility;

b. The total size of the facility property in acres;

c. The general layout of the facility including buildings and storage of raw materials, and the flow of goods and materials through the facility.

3. **Facility Map**

The SWMP shall include a legible site map(s), showing the entire facility, and vicinity as appropriate, identifying:

a. The location of the facility in relation to surface waters that receive industrial stormwater discharges from the facility (including the name of the surface water; if the name is not known, indicate that on the map); a separate vicinity map may be necessary to comply with this requirement;

b. Location of significant impervious surfaces within the facility property boundaries, including paved areas and buildings;

c. The locations of all facility stormwater conveyances including ditches, pipes, and swales;

d. The locations of stormwater inlets and outfalls, with a unique identification code for each outfall (e.g., Outfall No. 1, No. 2, etc), and indicating whether one or more outfalls are "substantially identical" under Part I.H (General Monitoring Requirements); and an approximate outline of the areas draining to each outfall;

e. Directions of stormwater flow indicated by arrows;

f. The areas where industrial activities are conducted, where such activities are exposed to precipitation;

g. Locations of all pollutant sources (actual or potential) associated with specific industrial activities as identified under Part I.F.4;

h. Location of all structural and applicable non-structural control measures used to meet the effluent limits required by this permit;

i. Locations where significant spills or leaks identified under Part I.F.4.b have occurred;

j. Locations of all stormwater monitoring points applicable to the facility (visual monitoring; benchmark monitoring, numeric effluent monitoring, water quality-based monitoring);

k. Location and description of any non-stormwater discharges authorized in Part I.A.1.b., emergency fire fighting discharges authorized in Part I.A.1.c, or authorized by separate permit coverage.

l. Locations and sources of run-on to the facility from adjacent property that contains significant quantities of pollutants.

4. **Facility Inventory and Assessment of Pollutant Sources**

The facility inventory and assessment shall include the following:

a. Inventory of facility activities and equipment
The inventory shall identify all areas (except interior areas that are not exposed to precipitation) associated with industrial activities that have been, or may potentially be, sources of pollutants, that contribute, or have the potential to contribute, any pollutants to stormwater, including but not limited to the following:

i) Loading and unloading of materials, including solids and liquids.

ii) Outdoor storage of materials or products, including solids and liquids.

iii) Outdoor manufacturing and processing.

iv) On-site dust or particulate generating processes, including dust collection devices and vents.

v) On-site waste treatment, storage, or disposal, including waste ponds and solid waste management units.

vi) Vehicle and equipment fueling, maintenance, and/or cleaning (includes washing).

vii) Immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility.

viii) Roofs or other surfaces exposed to air emissions from a manufacturing building or a process area.

ix) Roofs and associated surfaces composed of galvanized materials that may be mobilized by stormwater (e.g., roofs, ducts, heating/air conditioning equipment, gutters and downspouts).

b. Inventory of materials
The inventory shall list materials that contribute, or have the potential to contribute, pollutants to stormwater, including but not limited to the following:

i) The types of materials handled at the facility that may be exposed to precipitation or runoff and could result in stormwater pollution.

ii) The types of materials handled at the facility that may leak or spill, and be exposed to precipitation or runoff and result in stormwater pollution.

iii) A narrative description of any potential sources of pollutants from past activities, materials and spills that could contribute pollutants to stormwater discharges, and the corresponding outfall(s) that would be affected by such spills and leaks. The description shall include the method and location of any on-site storage or disposal; and documentation of all significant spills and leaks of oil or toxic or hazardous pollutants that occurred at exposed areas, or that drained to a stormwater conveyance, in the 3 years prior to the SWMP preparation date.

c. Assessment of potential pollutant sources

The assessment of potential pollutant sources shall provide a short narrative or tabulation describing the potential of a pollutant to be present in stormwater discharges for each facility activity, equipment and material identified above. The permittee shall update this narrative when data become available to verify the presence or absence of these pollutants.

5. **Description of Control Measures**

a. The permittee shall document the location and type of each non-structural and structural control measure implemented at the facility to achieve meet the effluent limitations contained in this permit and listed below. Documentation must include those control measures implemented for stormwater run-on that commingles with any discharges covered under this permit.

i) The practice-based limitations required by Part I.D.1 and Part III of this permit.

ii) All applicable effluent limitations guidelines-based limits (Part I.A.1, Tables A-1 and A-2) required by this permit.

iii) The water quality-based effluent limits (Part I.D.3) required by this permit.

b. Installation and implementation specifications for each control measure used by the permittee to meet the effluent limitations contained in this permit must be retained with the SWMP.

6. **Additional Control Measure Requirements**

The permittee shall document the schedules, procedures, and evaluation results for the following subset of practice-based effluent limitations.

a. Good Housekeeping (see Part I.D.1.b) – A schedule for regular pickup and disposal of waste materials, along with routine inspections for leaks and conditions of drums, tanks and containers.

b. Maintenance (see Part I.D.1.c) – Preventative maintenance schedules for industrial equipment and systems; control measures; and any back-up practices in place should a runoff event occur while a control measure is off-line.

c. Spill Prevention and Response Procedures (see Part I.D.1.d) – Procedures for preventing, responding to, and reporting spills and leaks. The permittee may reference other plans (e.g., a Spill Prevention Control and Countermeasure (SPCC) plan) otherwise required by a permit for the facility, provided that a copy of the other plan is kept onsite with the SWMP, and made available for review consistent with Part I.E (SWMP—General SWMP Requirements).

d. Employee Training (see Part I.D.1.i) – A schedule for all types of training required by this permit, content of the training, and log of the dates on which specific employees received training.

e. Non-Stormwater Discharges (see Part I.D.1.j) – Documentation of the stormwater conveyance system evaluation for the presence of non-stormwater discharges not authorized in Part.I.A.1.b, and the elimination of all unauthorized discharges. Documentation of the evaluation must include:

i) The date of any evaluation;
ii) A description of the evaluation criteria used;
iii) A list of the outfalls or onsite drainage points that were directly observed during the evaluation;
iv) The different types of non-stormwater discharge(s) and source locations; and
v) The action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), if any were identified.

7. **Inspection Procedures and Documentation**

The permittee shall document inspection procedures, and maintain such procedures and other documentation with the SWMP, as follows:

a. The permittee shall document procedures for performing the facility inspections required by Part I.G (Inspections) of the permit. Procedures must identify:
   i) Person(s) or positions of person(s) responsible for inspection;
   ii) Schedules for conducting inspections, including tentative schedule for facilities in climates with irregular stormwater runoff discharges; and
   iii) Specific items to be covered by the inspection, including inspection schedules for specific outfalls.

b. The permittee shall maintain inspection documentation with the SWMP as required by Part I.G (Inspections) of this permit.

c. Permittees that invoke the exception to monthly inspections for inactive and unstaffed facilities must include in the SWMP the signed and certified documentation to support this claim as required Part I.G (Inspections).

8. **Monitoring Procedures and Documentation**

The permittee shall document monitoring procedures, and maintain such procedures and other documentation with the SWMP, as follows:

a. The permittee shall document procedures for performing the five types of monitoring required by Part I.I (Specific Monitoring Requirements) of the permit, where applicable to the facility, including:

   - Visual assessment monitoring (see Part I.I.1)
   - Benchmark monitoring (see Part I.I.2)
   - Effluent limitations guidelines monitoring (see Part I.I.3);
   - Impaired waters monitoring (see Part I.I.4); and
   - Additional monitoring as required by the Division (see Part I.I.5).

b. For each type of monitoring, procedures must identify:

   i) Locations where samples are collected, and outfall identification by its unique identifying number;
   ii) Staff responsible for conducting stormwater sampling;
   iii) Procedures for sample collection and handling, including any deviations from sampling within the first 30 minutes of a measurable storm event (see Part I.H.6);
   iv) Parameters for analysis, holding times and preservatives, analytical methods, and laboratory quantitation levels;
   v) Procedures for sending samples to a laboratory;
   vi) Monitoring schedules, including any deviations from the monitoring schedule for alternate monitoring periods for climates with irregular stormwater runoff (see Part I.H.9);
   vii) The numeric control values (benchmarks, effluent limitations guidelines, TMDL-related requirements, or other requirements) applicable to discharges from each outfall.

c. Permittees must maintain Quarterly Visual Assessment documentation (see Part I.I.1.c) with the SWMP.

d. Permittees that invoke the monitoring exceptions for inactive and unstaffed facilities must include in the SWMP the signed and certified documentation to support this claim as required by Part I.H.13.

e. Permittees that use the substantially identical outfall monitoring exception (Part I.H.3) must document the following in the SWMP:

i) Location of each of the substantially identical outfalls, and the outfall sampled;
ii) Description of the general industrial activities conducted in the drainage area of each outfall;
iii) Description of the control measures implemented in the drainage area of each outfall;
iv) Description of the exposed materials located in the drainage area of each outfall that are likely to be significant contributors of pollutants to stormwater discharges;
v) Impervious surfaces in the drainage area that could affect the percolation of stormwater runoff into the ground (e.g., asphalt, crushed rock, grass, etc.);
vi) Why the permittee expects the outfalls to discharge substantially identical effluents.

9. **Corrective Action Documentation**

The permittee must maintain a copy of all Corrective Action reports that document corrective actions taken by the permittee consistent with Part I.J (Corrective Actions) of this permit, with the facility SWMP.

10. **Natural Background Pollutant Levels**

The permittee must maintain the following documentation with the SWMP:

a. findings that any benchmark exceedances were due to natural background pollutant levels and,

b. documentation to support any determination that pollutants of concern are not expected to be present above natural background levels if the permittee discharges directly to impaired waters, and that such pollutants were not detected in the facility discharge or were solely attributable to natural background sources (see Part I.I.4.c).

G. INSPECTIONS

1. **Inspection Frequency and Personnel**

a. The permittee shall conduct and document visual inspections of the facility at least **quarterly** (i.e., once each calendar quarter). Inspections shall be conducted at least 20 days apart.

b. The permittee shall conduct a minimum of one (1) inspection per calendar year during a runoff event, which for a rain event means during, or within 24 hours after the end of, a measureable storm event (as defined in Appendix C); and for a snowmelt event, means at a time when a measurable discharge occurs from the facility.

c. The permittee shall ensure that inspections are conducted by qualified personnel.

2. **Inspection Scope**

Each inspection shall include:

a. Observations made at stormwater sampling locations and areas where stormwater associated with industrial activity is discharged off-site; or discharged to waters of the state, or to a storm sewer system that drains to waters of the state.

b. Observations for the presence of floating materials, visible oil sheen, discoloration, turbidity, odor, etc. in the stormwater discharge(s).

c. Observations of the condition of and around stormwater outfalls, including flow dissipation measures to prevent scouring.

d. Observations for the presence of illicit discharges or other non-permitted discharges such as domestic wastewater, noncontact cooling water, or process wastewater (including leachate).
e. A verification that the descriptions of potential pollutant sources required under this permit are accurate.

f. A verification that the site map in the SWMP reflects current conditions.

g. An assessment of all control measures used to comply with the effluent limits contained in this permit, noting all of the following:

i) Effectiveness of control measures inspected.

ii) Locations of control measures that need maintenance or repair.

iii) Reason maintenance or repair is needed and a schedule for maintenance or repair.

iv) Locations where additional or different control measures are needed and the rationale for the additional or different control measures.

3. **Inspection Documentation**

The permittee shall document the findings for each inspection in an inspection report or checklist, and keep the record onsite with the facility SWMP. The permittee shall ensure each inspection report documents the observations, verifications and assessments required in Part I.G.2 above, and additionally includes:

a. The inspection date and time;

b. Locations inspected;

c. Weather information and a description of any discharges occurring at the time of the inspection;

d. A statement that, in the judgment of 1) the person conducting the site inspection, and 2) the person described in Part I.K.6 (Reports and Recordkeeping), the site is either in compliance or out of compliance with the terms and conditions of this permit, with respect to Part I.G.2 (Inspection Scope);

e. A summary report and a schedule of implementation of the corrective actions that the permittee has taken or plans to take if the site inspection indicates that the site is out of compliance;

f. Name, title, and signature of the person conducting site inspection; and the following statement: "I certify that this report is true, accurate, and complete, to the best of my knowledge and belief.";

g. Certification and signature of the person described in Part I.K.6 (Reports and Recordkeeping), or a duly authorized representative of the facility thereof.

4. **Exception to Inspection Frequency for Inactive and Unstaffed Sites that meet the condition of no exposure**

The requirement that permittees conduct and document quarterly visual inspections of the facility, and conduct at least one (1) inspection per calendar year during a runoff event, does not apply at a facility that is inactive and unstaffed, as long as a **condition of no exposure exists at its facility**, i.e., there are no industrial materials or activities exposed to stormwater. Such facilities are required to conduct two site inspections annually, in the spring and fall, in accordance with the requirements of this Part.

To invoke this exception, a permittee must maintain a statement in the facility SWMP pursuant to Part I.F.7 indicating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to

precipitation, in accordance with the substantive requirements in 5 CCR 1002-61.3(2)(h). The statement must be signed and certified in accordance with Part I.K.6 (Reports and Recordkeeping).

If conditions change and industrial materials or activities become exposed to stormwater or the facility becomes active and/or staffed, this exception no longer applies and the permittee must **immediately** resume quarterly inspections.

5. **Non-Compliance discovered during inspection**

Any corrective action required as a result of a facility inspection must be performed consistent with Part I.J (Corrective Actions) of this permit, and retained with the SWMP.

H. GENERAL MONITORING REQUIREMENTS

All permittees must collect and analyze stormwater samples and document monitoring activities consistent with the procedures described in Part I.I and any additional sector-specific requirements in Part III. The results of such monitoring shall be reported on the Discharge Monitoring Report form (see Part I.K – Reporting and Recordkeeping), to include reporting "No Discharge" on the DMR if no discharge occurs within the reporting period, and other reporting conventions consistent with Part I.K reporting requirements.

1. **Monitored Outfalls**

Applicable monitoring requirements apply to each outfall authorized by this permit, except as otherwise exempt from monitoring as a "substantially identical outfall."

2. **Representative Sampling**

Samples and measurements taken as required herein shall be representative of the nature of the monitored discharge.

3. **Substantially Identical Outfalls**

   a. When a facility has two or more outfalls that, based on a consideration of features (e.g. grass vs. pavement, slopes, catch basins vs. swales) and activities within the area drained by the outfall, the permittee reasonably believes discharge substantially identical effluents, the permittee may monitor the effluent of one such outfall and report that the results also apply to the substantially identical outfalls.

      i) For visual assessments (Part I.I.1—Specific Monitoring Requirements), this provision only applies provided that visual assessments are rotated between each substantially identical outfall throughout the period of the permittees coverage under this permit.

   b. As required in Part I.F.8, the SWMP must describe the rationale for any substantially identical outfall determinations.

4. **Measurable Storm Events.**

   a. Rain event. Permittees must conduct all required monitoring on a storm event that results in an actual discharge from the facility ("measurable storm event"), and that follows the preceding measurable storm event by at least 72 hours (3 days).

   b. Snowmelt event. The permittee must conduct snowmelt monitoring at a time when a measurable discharge occurs from the facility.

5. **Storm Event Information**

   a. Rain event. The permittee must document the information below for each monitored event. Such documentation is not required for events that do not meet the criteria in Part I.H.4, or that are not monitored to meet the requirements of this permit.

      i) The date, time of the start of the discharge, time of sampling, duration (in hours) of the rainfall event, and magnitude (in inches) of the storm event sampled;

      ii) The duration between the storm event sampled and the end of the most recent storm event that produced a discharge.

   b. Snowmelt monitoring. The permittee must document the date of the sampling event for each monitored snowmelt event.

6. **Sample Type and Requirements**

   a. Grab samples shall be used for all monitoring and shall not be combined.

   b. Permittees must take a minimum of one grab sample from a discharge resulting from a measurable storm event.

   c. Grab samples must be collected within the first 30 minutes of a measurable storm event (see Part I.H.4). If it is not possible to collect the sample within the first 30 minutes of a measurable storm event, the sample must be collected as soon as practicable after the first 30 minutes, and documentation must be kept with the SWMP explaining why it was not possible to take samples within the first 30 minutes.

   d. In the case of snowmelt, samples must be taken during a period with a measurable discharge.

   e. All discharge samples at a facility must be taken during the same storm event, if feasible.

7. **Analytical Requirements**

All sampling shall be performed by the permittee according to specified methods in 40 CFR Part 136; methods approved by EPA pursuant to 40 CFR Part 136; or methods approved by the Division, in the absence of a method specified in or approved pursuant to 40 CFR Part 136.

   a. If the permit contains a numeric effluent limit for a parameter, the analytical method and PQL selected for all monitoring conducted in accordance with this permit for that parameter shall be the one that can measure at or below the numeric effluent limit. If all specified analytical methods and corresponding PQLs are greater than the numeric effluent limit, then the analytical method with the lowest PQL shall be used.

   b. If the permit contains a report only requirement for a parameter, the analytical method and PQL chosen shall be one that can measure at or below the benchmark, or water quality standard, or other level approved by the Division. If all analytical methods and corresponding PQLs are greater than the benchmark, or water quality standard, or other level, then the analytical method with the lowest PQL shall be used.

   c. If the permit contains an interim effluent limitation (a limit is report until such time as a numeric effluent limit becomes effective) for a parameter, the analytical method and PQL chosen for all monitoring conducted in accordance with this permit for the parameter shall be one that can measure to the final numeric effluent limit. If all analytical methods and corresponding PQLs are greater than the final numeric effluent limit (s), then the analytical method with the lowest PQL shall be used.

d. For parameters such as TIN, the analytical methods chosen shall be those that can measure to the potential or final numeric effluent limit, based on the sum of the PQLs for nitrate, nitrite and ammonia.

e. When the analytical method which complies with the above requirements has a PQL greater than the permit limit, and the permittee's analytical result is less than the PQL, the permittee shall report "BDL" on the DMR. Such reports will not be considered as violations of the permit limit, as long as the lowest available PQL is used for the analysis. When the analytical method which complies with the above requirements has a PQL that is equal to or less than the permit limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR. For parameters that have a report only limitation, and the permittee's analytical result is less than the PQL, "< X" (where X = the actual PQL achieved by the laboratory) shall be reported on the DMR.

f. In the calculation of average concentrations (i.e. 7- day average, 30-day average, 2-year rolling average) any individual analytical result that is less than the PQL shall be considered to be zero for the calculation purposes. When reporting:

   If all individual analytical results are less than the PQL, the permittee shall report either "BDL" or "<X" (where X = the actual PQL achieved by the laboratory), following the guidance above.

   If one or more individual results is greater than the PQL, an average shall be calculated and reported. Note that it does not matter if the final calculated average is greater or less than the PQL, it must be reported as a value.

   Note that when calculating T.I.N. for a single sampling event, any value less than the PQL (for total ammonia, total nitrite, or total nitrate) shall be treated as zero. The T.I.N. concentration for a single sampling event shall then be determined as the sum of the analytical results (zeros if applicable) of same day sampling for total ammonia and total nitrite and total nitrate. From these calculated T.I.N. concentrations, the daily maximum and thirty day average concentrations shall be calculated and must be reported as a value.

g. The present lowest PQLs for specific parameters, as determined by the State Laboratory (November 2008) are provided below. If the analytical method cannot achieve a PQL that is less than or equal to the permit limit, then the method, or a more precise method, must achieve a PQL that is less than or equal to the PQL in the Table H-1 below. A listing of the PQLs for organic parameters that must meet the above requirement can be found in the Division's Practical Quantitation Limitation Guidance Document, July 2008.

   For nonylphenol, until such time as there is an EPA 40 CFR Part 136 method, the State is approving use of ASTM Methods D7065 and D7485. Until a statewide PQL has been developed, the permittee shall use either the default PQLs listed in the table below, or develop their own site-specific PQL in accordance with the Practical Quantitation Limitation Guidance Document (July 2008) for Organic Parameters. This document is available on the Division's website at www.coloradowaterpermits.com . The delayed effective date for the monitoring requirement allows time for the permittee to develop a site-specific PQL.

   These limits apply to the total recoverable or the potentially dissolved fraction of metals.

   For hexavalent chromium, samples must be unacidified so dissolved concentrations will be measured rather than potentially dissolved concentrations.

Table H-1. Practical Quantitation Limits (PQLs)			
Parameter	**PQLs**	**Parameter**	**PQLs**
Aluminum	50 µg/l	Mercury	0.1 µg/l
Ammonia	1 mg/l	Mercury (low-level)	0.003 µg/l
Arsenic	1 µg/l	Nickel	50 µg/l
Barium	5 µg/l	N-Ammonia	50 µg/l
Beryllium	1 µg/l	N Nitrate/Nitrite	0.5 mg/l
BOD / CBOD	1 mg/l	N-Nitrate	50 µg/l
Boron	50 µg/l	N-Nitrite	10 µg/l
Cadmium	1 µg/l	Total Nitrogen	0.5 mg/l
Calcium	20 µg/l	Phenols	100 µg/l
Chloride	2 mg/l	Phosphorus	10 µg/l
Chlorine	0.1 mg/l	Radium 226	1 pCi/l
Total Residual Chlorine		Radium 228	1 pCi/l
DPD colorimetric	0.10 mg/l	Selenium	1 µg/l
Amperometric titration	0.05 mg/l	Silver	0.5 µg/l
Chromium	20 µg/l	Sodium	0.2 mg/l
Chromium, Hexavalent	20 µg/l	Sulfate	5 mg/l
Copper	5 µg/l	Sulfide	0.2 mg/l
Cyanide (Direct / Distilled)	10 µg/l	Total Dissolved Solids	10 mg/l
Cyanide, WAD+A47	5 µg/l	Total Suspended Solids	10 mg/l
Fluoride	0.1 mg/l	Thallium	1 µg/l
Iron	10 µg/l	Uranium	1 µg/l
Lead	1 µg/l	Zinc	10 µg/l
Magnesium	20 µg/l	Nonylphenol D7065	10 µg/l
Manganese	2 µg/l	Nonylphenol D7485	0.33 µg/l

8. **Adverse Weather Conditions**

When adverse weather conditions prevent sample collection according to the relevant monitoring schedule, the permittee must take a substitute sample during the next qualifying storm event. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms.

Adverse weather does not exempt the permittee from having to file timely DMRs. The permittee must report any failure to monitor and indicate the basis for not sampling during the usual reporting period.

9. **Climates with Irregular Stormwater Runoff**

a. If a facility is located in an area where limited rainfall occurs during parts of the year, or in areas where freezing conditions exist that prevent runoff from occurring for extended periods, consistent with Part I.H.11 of this permit, the required monitoring events may be distributed during seasons when precipitation occurs, or when snowmelt results in a measurable discharge from the facility.

b. The permittee must still collect the required number of samples.

c. The permittee must maintain the revised monitoring schedule with the facility's SWMP as specified in Part I.F.8.

10. **Monitoring Periods**

Monitoring requirements in this permit begin in the first full quarter following **July 1, 2012** or the date of discharge authorization, whichever date comes later. Quarterly monitoring must be conducted at least once in each of the following 3-month intervals:

- January 1 – March 31;
- April 1 – June 30;
- July 1 – September 30; and
- October 1 – December 31.

This monitoring schedule may be modified in accordance with Part I.H.11 below; the revised schedule must be documented with the facility SWMP.

11. **Changes to Monitoring Requirements and Additional Monitoring**

A permittee may request that the Division modify permit certification monitoring conditions, (i.e., monitoring parameters and frequency, and sample type). A justification for such modifications must accompany the request.

If the permittee, using an approved analytical method, monitors any parameter more frequently than required by this permit, then the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (DMRs) or other forms as required by the Division. Such increased frequency shall also be indicated.

12. **Monitoring for Allowable Non-Stormwater Discharges**

A permittee is only required to monitor allowable non-stormwater discharges (as delineated in Part I.A.1.b) when they are commingled with stormwater discharges associated with industrial activity.

13. **Monitoring Exceptions for Inactive and Unstaffed Sites that meet the condition of no exposure**

The requirement that permittees conduct and document quarterly visual assessments, benchmark sampling, ELG or water quality standards monitoring of stormwater discharges from the facility does not apply at a facility that is inactive and unstaffed, as long as a **condition of no exposure exists at its facility**, i.e., there are no industrial materials or activities exposed to stormwater.

a. To invoke this exception, a permittee must maintain a statement in the facility SWMP pursuant to Part I.F.8 indicating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to precipitation, in accordance with the substantive requirements in 5 CCR 1002-61.3(2)(h). The statement must be signed and certified in accordance with Part I.K (Reports and Recordkeeping). DMR reporting shall be consistent with Part I.K.1 of this permit.

b. If conditions change and industrial materials or activities become exposed to stormwater or the facility becomes active and/or staffed, this exception no longer applies and the permittee must **immediately** resume quarterly visual assessments and benchmark sampling.

I. SPECIFIC MONITORING REQUIREMENTS: Visual, Benchmark, Effluent Limitation Guideline, Water Quality Standards Monitoring, and Additional Monitoring

This permit includes five types of required monitoring, one or more of which may apply to the discharge authorized by this permit, **as identified in the permit certification for the permitted facility**.

When more than one type of monitoring for the same parameter at the same outfall applies (e.g., total suspended solids once per year for an effluent limit and once per quarter for benchmark monitoring at a given outfall), the permittee may use a single sample to satisfy both monitoring requirements (i.e., one sample satisfying both the annual effluent limit sample and one of the 4 quarterly benchmark monitoring samples).

1. **Visual Monitoring**

Once each **quarter** for the entire permit term, the permittee must collect a stormwater sample from each outfall (or a substantially identical outfall pursuant to Part I.H.3 above) and conduct a visual assessment of each of these samples.

a. These samples should be collected in such a manner that the samples are representative of the stormwater discharge.

b. The visual assessment must be made of a sample in a clean, clear glass, or plastic container, and examined in a well-lit area. The permittee must visually inspect the sample for the presence of the following water quality characteristics:

i) Color;
ii) Odor;
iii) Clarity;
iv) Floating solids;
v) Settled solids;
vi) Suspended solids;
vii) Foam;
viii) Oil sheen; and
ix) Other obvious indicators of stormwater pollution.

c. Quarterly Visual Assessment Documentation. The permittee must document the visual assessment results and maintain this documentation onsite with the facility SWMP as required in Part I.F.8. The permittee is not required to submit visual assessment findings to the Division, unless specifically requested to do so. At a minimum, visual assessment documentation of the must include:

i) Sample location(s);
ii) Sample collection date and time, and visual assessment date and time for each sample;
iii) Personnel collecting the sample and performing visual assessment, and their signatures;
iv) Nature of the discharge (i.e., runoff or snowmelt);
v) Results of observations of the stormwater discharge;
vi) Probable sources of any observed stormwater contamination; and
vii) If applicable, why it was not possible to take samples within the first 30 minutes.

d. Quarterly Visual Assessment Corrective Actions. If the visual assessment indicates the control measures for the facility are inadequate or are not being properly operated and maintained, the permittee must conduct corrective actions consistent with Part I.J (Corrective Actions) of this permit.

e. The permittee shall maintain visual monitoring procedures in the SWMP as required in Part I.F.8.

2. **Benchmark Monitoring**

This permit provides pollutant benchmark concentrations that may be applicable to the discharge authorized by this permit. The benchmark concentrations are not effluent limitations; a benchmark exceedance, therefore, is not a permit violation. When the discharge exceeds an applicable benchmark concentration, the permittee must conduct corrective actions consistent Part I.J (Corrective Actions) of this permit. Failure to respond to benchmark value exceedances is a violation of the permit.

a. Applicability of Benchmark Monitoring
The permittee shall monitor at each benchmark sampling location for each benchmark parameter(s) specified for the primary industrial activity, and any co-located industrial activities, applicable to the facility discharge.

Industry-specific benchmark concentrations are listed in the sector-specific sections of Part III. The Division may also include a site specific benchmark in a permit certification as appropriate to ensure that compliance with the other terms and conditions of the permit will control discharges as necessary to meet water quality based effluent limitations contained in Part I.D.3.a of the permit.

b. Benchmark Monitoring Schedule
Benchmark monitoring must be conducted **quarterly**, as identified in Part I.H.9, for the first **4** full quarters of permit coverage. Exceptions to this schedule include:

i) Permittees at facilities in climates with irregular stormwater runoff may request a modification of this quarterly schedule as specified in Part I.H.11 of this permit.

c. Averaging monitoring values
Permittees must calculate average concentrations in accordance with the requirements of Part I.H.7.g of this permit.

d. Benchmark Monitoring Actions – *Data not exceeding benchmarks*
After collecting **4** benchmark samples, if the average of the monitoring values for any parameter, at a specific outfall, does not exceed the benchmark, the permittee may reduce benchmark monitoring frequency for that parameter to **once-per-year**, rotating through the monitoring periods provided in Part I.H.9, such that **8** samples are collected every five years. DMR reporting shall be consistent with Part I.K.1 of this permit.

e. Benchmark Monitoring Actions – *Data exceeding benchmarks*

i) If the averaged monitoring values for any parameter, at a specific outfall, exceeds the benchmark, as described in a) through c) below, the permittee must conduct corrective action in accordance with Part I.J—Corrective Actions of this permit.

a) The average of the initial **4** quarterly sample monitoring values for any parameter exceeds the benchmark.

b) If less than **4** benchmark samples have been taken, but the sum of the quarterly sample results to date is more than **4** times the benchmark level (i.e., an exceedance of the **4** quarter average is mathematically certain), this is considered a benchmark exceedance.

c) If any of the annual samples taken after the first **4** quarterly samples (i.e., samples **5** through **8**), when averaged with the proceeding samples, causes an average monitoring value that exceeds the benchmark for any parameter, this is considered a benchmark exceedance.

ii) Following control measure(s) modification, the permittee must continue **quarterly** monitoring for **4** additional quarters. For this monitoring:

a) If the average of the monitoring values for any parameter does not exceed the benchmark, the permittee may monitor once-per-year as described in Part I.I.2.d, above.

b) If the average of the monitoring values for any parameter still exceeds the benchmark (or if an exceedance of the benchmark by the 4 quarter average is mathematically certain prior to conducting the full 4 additional quarters of monitoring), the permittee must again conduct corrective actions consistent with Part I.J (Corrective actions) of this permit unless the Division waives the requirement for additional monitoring and corrective action.

f. Natural background pollutant levels
Following the first 4 quarters of benchmark monitoring (or sooner if the exceedance is triggered by less than 4 quarters of data, see above), if the average concentration of a pollutant exceeds a benchmark value, and the

permittee determines that exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background, the permittee is not required to perform corrective action or additional benchmark monitoring provided that:

i) The average concentration of the benchmark monitoring results is less than or equal to the concentration of that pollutant in the natural background;
ii) The permittee documents and maintains with the SWMP supporting rationale for concluding that benchmark exceedances are in fact attributable solely to natural background pollutant levels. The permittee must include in the supporting rationale any data previously collected by the permittee or others (including literature studies) that describe the levels of natural background pollutants in the facility stormwater discharge; and
iii) The permittee notifies the Division that the benchmark exceedances are attributable solely to natural background pollutant. DMR reporting shall be consistent with Part I.K. of this permit.

Natural background pollutants include those substances that are naturally occurring in soils. Natural background pollutants **do not** include legacy pollutants from earlier activity on the site, or pollutants in run-on from neighboring sources which are not naturally occurring.

3. **Effluent Limitations Guidelines (ELG) Monitoring**

a. ELG Monitoring Schedule

ELG monitoring must be conducted **once per year** at **each** outfall discharging runoff from any regulated activity identified in Part I.A.1, Tables A-1 and A-2 of this permit, for the parameters specified in the sector-specific section of Part III.

b. Follow-up Actions if Discharge Exceeds Numeric Effluent Limit

i) If a numeric effluent limit required by this permit is exceeded, the permittee must conduct corrective action(s) pursuant to Part I.J (Corrective Actions), **and** conduct follow-up monitoring.

ii) The permittee must conduct follow-up monitoring during the next qualifying rain event for any parameter which exceeded an effluent limit.

iii) If the follow-up monitoring exceeds the applicable effluent limitation, the permittee must continue to monitor, **at least quarterly**, until the facility discharge is in compliance with the effluent limit or until the Division waives the requirement for additional monitoring.

iv) Consistent with Part I.K (Reports and Recordkeeping) the violations and the results of any additional sampling shall be recorded on the next appropriate DMR or report.

4. **Water Quality Standards Monitoring**

a. Applicability of Water Quality Standards Monitoring

Consistent with the provisions in Part I.D.3 the Division will apply monitoring conditions (i.e., sampling parameters, sampling frequency, and sample type) in the permit certification issued to a permittee for discharges to impaired waters, discharges to waters designated as critical habitat for threatened and endangered species, and other discharges as necessary to determine if compliance with the other terms and conditions of the permit will control discharges as necessary to meet water quality standards. Monitoring conditions will be consistent with applicable water quality standard(s) for the receiving water, and as applicable, the assumptions of any available wasteload allocation in an applicable TMDL.

b. Initial monitoring schedule and modification

i) The permittee must monitor discharges to impaired waters **once per quarter** at each outfall (except substantially identical outfalls) discharging stormwater to impaired waters.

ii) Modification of monitoring schedule. Consistent with Part I.H.11 of this permit, permittees may request modification of the water quality standards monitoring requirements required by the permit certification if, after one year of monitoring (4 samples) a pollutant, at a specific outfall, is not detected above the applicable, end-of-pipe water quality standard in any sample.

c. Natural background pollutant levels

The quarterly impaired waters monitoring requirement does not apply after one year if the pollutant for which the waterbody is impaired is not detected above natural background levels in the facility stormwater discharge, and the permittee documents that this pollutant is not expected to be present above natural background levels in the facility discharge.

If the pollutant for which the water is impaired is not present and not expected to be present in the facility discharge, or it is present but the permittee has determined that its presence is caused solely by natural background sources, the permittee must notify the Division , after which the permittee may discontinue quarterly monitoring. DMR reporting shall be consistent with Part I.K. of this permit. To support a determination that the pollutant's presence is caused solely by natural background sources, the permittee must keep the following documentation with the facility SWMP records:

i) An explanation of why the permittee believes that the presence of the pollutant causing the impairment in the facility discharge is not related to the activities at the facility; and
ii) Data and/or studies that tie the presence of the pollutant causing the impairment in the facility discharge to natural background sources in the watershed.

Natural background pollutants include those substances that are naturally occurring in soils. Natural background pollutants **do not** include legacy pollutants from earlier activity on the site, or pollutants in run-on from neighboring sources which are not naturally occurring.

5. **Additional Monitoring Required by the Division**

The Division may notify a permittee of additional discharge monitoring requirements. Any such notice will briefly state the reasons for the monitoring, locations, and monitoring parameters, frequency and period of monitoring, sample types, and reporting requirements. Such monitoring may include salinity and in-stream sampling and whole effluent toxicity testing.

J. CORRECTIVE ACTIONS

1. **Conditions that must be Eliminated**

If any of the following conditions occur at the permitted facility (as identified by the permittee; the Division; or an EPA official, or local, or State entity), the permittee must review and revise the selection, design, installation, and implementation of facility control measures to ensure that the condition is eliminated and will not be repeated in the future:

a. an unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this [see Parts I.A.1.a and I.A.1.b] or another permit) occurs;

b. a discharge violates a numeric effluent limit (see Part I.I.3);

c. facility control measures are not stringent enough for the discharge to meet applicable water quality standards;
d. modifications to the facility control measures are necessary to meet the practice-based effluent limits in this permit; or

e. the permittee finds in a facility inspection, that facility control measures are not properly selected, designed, installed, operated or maintained.

2. **Conditions that Require Review and Modification**

If any of the following conditions occur, the permittee must review the selection, design, installation, and implementation of facility control measures to determine the appropriate modifications necessary to attain the effluent limits in this permit:

a. construction or a change in design, operation, or maintenance at the facility significantly changes the nature of pollutants discharged in stormwater from the facility, or significantly increases the quantity of pollutants discharged; or

b. the **average** of quarterly sampling results as described in Part I.I.2.e of this permit exceeds an applicable benchmark.

3. **Corrective Action Reports and Deadlines**

The permittee must document discovery of any condition listed in Parts I.J.1 and I.J.2 above, within 24 hours and 5 days as described below, submit the documentation in an annual report as required in Part I.K (Reports and Recordkeeping), and retain a copy onsite with the facility SWMP as required in Part I.F (SWMP-Specific SWMP Requirements).

a. 24 hour documentation requirement:
Within 24 hours of discovery of any condition listed in Parts I.J.1 and I.J.2, the permittee must document the following information:

i) Identification of the condition triggering the need for corrective action review;
ii) Description of the problem identified; and
iii) Date the problem was identified.

b. Five (5) day documentation requirement:
Within five (5) days of discovery of any condition listed in Parts I.J.1 and I.J.2, the permittee must document the following information:

i) Summary of corrective action taken or to be taken (or, for triggering events identified in Part I.J.2 where the permittee determines that corrective action is not necessary, the basis for this determination);
ii) Notice of whether SWMP modifications are required as a result of this discovery or corrective action;
iii) Date corrective action initiated; and
iv) Date corrective action completed or expected to be completed.

4. **Control measure modification**

Modification of any control measure as part of the corrective action required by Parts I.J.1 and I.J.2 must be performed consistent with Part I.C (Control Measures) of this permit.

5. **Substantially Identical Outfalls**

If the event triggering corrective action is associated with an outfall that represents other substantially identical outfalls, the permittee's review must assess the need for corrective action for each outfall represented by the outfall that triggered the review. Any necessary changes to control measures that affect these other outfalls must also be performed consistent with Part I.C (Control Measures) of this permit, and the permittee must implement interim or temporary controls measures during the maintenance effort.

K. REPORTING AND RECORDKEEPING

1. **Routine Reporting of Data- Discharge Monitoring Report**

The permittee shall report the data gathered in compliance with Parts I.I.2 through I.I.5 (Specific Monitoring Requirements) on a **quarterly** basis. Reporting of all data gathered shall comply with the requirements of Part I.H. (General Requirements) and Part I.K (Reports and Recordkeeping) of this permit. The permittee shall summarize monitoring results for each calendar quarter and report on Division approved discharge monitoring report (DMR) forms (EPA form 3320-1).

The permittee must submit these forms either by mail, or by using the Division's Net-DMR service. If mailed, one form shall be mailed to the Division, as indicated below, so that the DMR is received no later than the 28th day of the following month (for example, the DMR for the first calendar quarter must be received by the Division by April 28th).

Required DMR reporting conventions are as follows:

- If no discharge occurs during the reporting period, "**No Discharge**" shall be reported on the DMR.
- If the permittee's benchmark sampling frequency is reduced consistent with Part I.I.2.d of this permit (Benchmark Monitoring Actions – *Data not exceeding benchmarks*), the permittee must submit quarterly DMRs and indicate "**Benchmark Met**" in the result field on the DMR for each parameter that meets the sampling frequency reduction criteria.
- If the permittee's monitoring is excepted consistent with Part I.H.13 of this permit, the permittee must submit quarterly DMRs and indicate "**No Exposure**" in the result field on the DMR for each parameter for the period the site meets the monitoring exception criteria.
- If the permittee's benchmark or water quality standard sampling requirement does not apply consistent with Part I.I.2.f and Part I.I.4 of this permit, the permittee must submit quarterly DMRs and indicate "**Natural Background**" in the result field on the DMR for each applicable parameter.

The signed copy of each discharge monitoring report (DMR) shall be submitted to the Division at the following address:

Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD-P-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

The Discharge Monitoring Report forms shall be filled out accurately and completely in accordance with requirements of this permit and the instructions on the forms. They shall be signed by an authorized person as identified in Part I.K.6.

2. **Annual Report**

The permittee must submit an annual report to the Division for the reporting period January 1 through December 31. Annual reports must be received by the Division **by March 31** of the following year. The Annual Report shall include:

- Name of permittee, address, phone number
- Permit certification number
- Facility name and physical address
- Contact person name, title, and phone number
- Summary of inspection dates
- Corrective action documentation as required in Part I.J., and status of any outstanding corrective action(s).

The signed copy of each annual report shall be submitted to the Division at the address below, and a copy maintained with the SWMP.

Attn: Annual Report
Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD-P-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

3. **Additional Reporting**

In addition to the reporting requirements stipulated in this Part, the permittee is also subject to the standard permit reporting provisions of Part II of this permit.

4. **SWMP Records**

The permittee shall retain copies of the facility SWMP, including any modifications made during the term of this permit, documentation related to corrective actions taken, all reports and certifications required by this permit, monitoring data, and records of all data used to complete the application to be covered by this permit, for a period of at least 3 years from the date that coverage under this permit expires or is terminated.

5. **Sampling Records**

The permittee shall establish and maintain records. Those records shall include the following:

a. The date, type, exact location, and time of sampling or measurements;
b. The individual(s) who performed the sampling or measurements;
c. The date(s) the analyses were performed;
d. The individual(s) who performed the analyses;
e. The analytical techniques or methods used;
f. The results of such analyses; and
g. Any other observations which may result in an impact on the quality or quantity of the discharge as indicated in 40 CFR 122.44 (i)(1)(iii).

The permittee shall retain for a minimum of three (3) years records of all monitoring information, including all original strip chart recordings for continuous monitoring instrumentation, all calibration and maintenance records, copies of all reports required by this permit and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Division or EPA.

6. **Signatory and Certification Requirements**

   a. All reports and other information required by the Division, shall be signed and certified for accuracy by the permittee in accord with the following criteria:
      i) In the case of corporations, by a responsible corporate officer. For purposes of this section, the responsible corporate officer is responsible for the overall operation of the facility from which the discharge described in the form originates;

      ii) In the case of a partnership, by a general partner;

      iii) In the case of a sole proprietorship, by the proprietor;

      iv) In the case of a municipal, state, or other public facility, by either a principal executive officer, or ranking elected official. For purposes of this section, a principal executive officer has responsibility for the overall operation of the facility from which the discharge originates;

      v) By a duly authorized representative of a person described above, only if:

         1) The authorization is made in writing by a person described in i, ii, iii, or iv above;

         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 written authorization is submitted to the Division.

   b. If an authorization as described in this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Division prior to or together with any reports, information, or applications to be signed by an authorized representative.

      The permittee, or the duly authorized representative shall make and sign the following certification on all such documents:

      "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 gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

L. OTHER TERMS AND CONDITIONS

1. All dischargers must comply with the lawful requirements of counties, drainage districts and other state or local agencies regarding any discharges of stormwater to storm drain systems or other water courses under their jurisdiction.

2. Reporting to Municipality – Any permitted facility discharging to a municipal storm sewer shall provide the municipality with a copy of the permit application, and/or Annual Reports, upon request. A copy of the SWMP shall also be provided to the municipality upon request.

PART II

A. NOTIFICATION REQUIREMENTS

1. **Notification to Parties**

All notification requirements under this section shall be directed as follows:

a. Oral Notifications, during normal business hours shall be to:

Water Quality Protection Section - Industrial Compliance Program
Water Quality Control Division
Telephone: (303) 692-3500

b. Written notification shall be to:

Water Quality Protection Section - Industrial Compliance Program
Water Quality Control Division
Colorado Department of Public Health and Environment
WQCD-WQP-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

2. **Change in Discharge**

The permittee shall notify the Division, in writing, of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged, or;

b. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported pursuant to an approved land application plan.

The permittee shall give advance notice to the Division of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

Whenever notification of any planned physical alterations or additions to the permitted facility is required pursuant to this section, the permittee shall furnish the Division such plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge, the stream, or ground water. If the Division finds that such new or altered discharge might be inconsistent with the conditions of the permit, the Division shall require a new or revised permit application and shall follow the procedures specified in Sections 61.5 through 61.6, and 61.15 of the Colorado Discharge Permit System Regulations.

3. **Special Notifications - Definitions**

a. Bypass: The intentional diversion of waste streams from any portion of a treatment facility.

b. Severe Property Damage: Substantial physical damage to property at 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. It does not mean economic loss caused by delays in production.

c. Upset: An exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

4. **Noncompliance Notification**

a. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in this permit, the permittee shall, at a minimum, provide the Division with the following information:

i) A description of the discharge and cause of noncompliance;

ii) The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and

iii) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

b. The permittee shall report the following circumstances **orally within twenty-four (24) hours** from the time the permittee becomes aware of the circumstances, and shall mail to the Division a written report containing the information requested in Part II.A.4.a above, **within five (5) working days** after becoming aware of the following circumstances:

i) Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;

ii) Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;

iii) Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;

iv) Daily maximum violations for any of the pollutants limited by Part I.D.3 of this permit and specified as requiring 24-hour notification. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.

c. Unless otherwise indicated in this permit, the permittee shall report instances of non-compliance which are not required to be reported within 24-hours at the time Discharge Monitoring Reports are submitted. The reports shall contain the information listed in sub-paragraph (a) of this section.

5. **Other Notification Requirements**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any **compliance schedule** in the permit shall be submitted no later than fourteen (14) calendar days following each scheduled date, unless otherwise provided by the Division.

The permittee shall notify the Division, in writing, thirty (30) calendar days in advance of a proposed transfer of permit as provided in Part II.B.3.

The permittee's notification of all anticipated noncompliance does not stay any permit condition.

All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Division as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i) One hundred micrograms per liter (100 µg/l);

ii) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2.4-dinitrophenol and 2-methyl-4.6-dinitrophenol; and one milligram per liter (1.0 mg/l) for antimony;

iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Section 61.4(2)(g).

iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i) Five hundred micrograms per liter (500 µg/l);

ii) One milligram per liter (1 mg/l) for antimony; and

iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application.

iv) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

6. **Bypass Notification**

If the permittee knows in advance of the need for a bypass, a notice shall be submitted, at least ten (10) calendar days before the date of the bypass, to the Division. The bypass shall be subject to Division approval and limitations imposed by the Division. Violations of requirements imposed by the Division will constitute a violation of this permit.

7. **Upsets**

a. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of paragraph (b) of this section 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.

b. Conditions Necessary for a Demonstration of Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

i) An upset occurred and that the permittee can identify the specific cause(s) of the upset; and

ii) The permitted facility was at the time being properly operated and maintained; and

iii) The permittee submitted proper notice of the upset as required in Part II.A.4. of this permit (24-hour notice); and

iv) The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reason able likelihood of adversely affecting human health or the environment.

In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

c. Burden of Proof

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

8. **Discharge Point**

Any discharge to the waters of the State from a point source other than specifically authorized by this permit is prohibited.

9. **Proper Operation and Maintenance**

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance and adequate laboratory and process controls, including appropriate quality assurance procedures (40 CFR 122.41(e)). This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when necessary to achieve compliance with the conditions of the permit.

10. **Minimization of Adverse Impact**

The permittee shall take all reasonable steps to minimize or prevent any discharge of sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. As necessary, accelerated or additional monitoring to determine the nature and impact of the noncomplying discharge is required.

11. **Removed Substances**

Solids, sludges, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed in accordance with applicable state and federal regulations.

For all domestic wastewater treatment works, at industrial facilities, the permittee shall dispose of sludge in accordance with all State and Federal regulations.

12. **Submission of Incorrect or Incomplete Information**

Where the permittee failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or report to the Division, the permittee shall promptly submit the relevant information which was not submitted or any additional information needed to correct any erroneous information previously submitted.

13. **Bypass**

a. Bypasses are prohibited and the Division may take enforcement action against the permittee for bypass, unless:

i) The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;

ii) There were no feasible alternatives to 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

iii) Proper notices were submitted in compliance with Part II.A.4.

b. "Severe property damage" as used in this Subsection means substantial physical 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.

c. The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance or to assure optimal operation. These bypasses are not subject to the provisions of paragraph (a) above.

d. The Division may approve an anticipated bypass, after considering adverse effects, if the Division determines that the bypass will meet the conditions specified in paragraph (a) above.

14. **Reduction, Loss, or Failure of Treatment Facility**

The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production, control sources of wastewater, or all discharges, until the facility is restored or an alternative method of treatment is provided. This provision also applies to power failures, unless an alternative power source sufficient to operate the wastewater control facilities is provided.

It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B. RESPONSIBILITIES

1. **Inspections and Right to Entry**

The permittee shall allow the Division and/or the authorized representative, upon the presentation of credentials:

a. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any monitoring equipment or monitoring method required in the permit; and

c. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect and/or investigate, any actual, suspected, or potential source of water pollution, or to ascertain compliance or non compliance with the Colorado Water Quality Control Act or any other applicable state or federal statute or regulation or any order promulgated by the Division. The investigation may include, but is not limited to, the following: sampling of any discharge and/or process waters, the taking of photographs, interviewing of any person having knowledge related to the discharge permit or alleged violation, access to any and all facilities or areas within the permittee's premises that may have any effect on the discharge, permit, or alleged

violation. Such entry is also authorized for the purpose of inspecting and copying records required to be kept concerning any effluent source.

d. The permittee shall provide access to the Division to sample the discharge at a point after the final treatment process but prior to the discharge mixing with state waters upon presentation of proper credentials.

In the making of such inspections, investigations, and determinations, the Division, insofar as practicable, may designate as its authorized representatives any qualified personnel of the Department of Agriculture. The Division may also request assistance from any other state or local agency or institution.

2. **Duty to Provide Information**

The permittee shall furnish to the Division, within a reasonable time, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit.

3. **Transfer of Ownership or Control**

a. Except as provided in paragraph b. of this section, a permit may be transferred by a permittee only if the permit has been modified or revoked and reissued as provided in Section 61.8(8) of the Colorado Discharge Permit System Regulations, to identify the new permittee and to incorporate such other requirements as may be necessary under the Federal Act.

b. A permit may be automatically transferred to a new permittee if:

i) The current permittee notifies the Division in writing 30 days in advance of the proposed transfer date; and

ii) The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and

iii) The Division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.

iv) Fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15, have been met.

4. **Availability of Reports**

Except for data determined to be confidential under Section 308 of the Federal Clean Water Act and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.5(4), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division and the Environmental Protection Agency.

The name and address of the permit applicant(s) and permittee(s), permit applications, permits and effluent data shall not be considered confidential. Knowingly making false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Clean Water Act, and Section 25-8-610 C.R.S.

5. **Modification, Suspension, Revocation, or Termination of Permits By the Division**

The filing of a request by the permittee for a permit modification, revocation and reissuance, termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

a. A permit may be modified, suspended, or terminated in whole or in part during its term for reasons determined by the Division including, but not limited to, the following:

i) Violation of any terms or conditions of the permit;

ii) Obtaining a permit by misrepresentation or failing to disclose any fact which is material to the granting or denial of a permit or to the establishment of terms or conditions of the permit; or

iii) Materially false or inaccurate statements or information in the permit application or the permit.

iv) A determination that the permitted activity endangers human health or the classified or existing uses of state waters and can only be regulated to acceptable levels by permit modifications or termination.

b. A permit may be modified in whole or in part for the following causes, provided that such modification complies with the provisions of Section 61.10 of the Colorado Discharge Permit System Regulations:

i) There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

ii) The Division has received new information which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of different permit conditions at the time of issuance. For permits issued to new sources or new dischargers, this cause includes information derived from effluent testing required under Section 61.4(7)(e) of the Colorado Discharge Permit System Regulations. This provision allows a modification of the permit to include conditions that are less stringent than the existing permit only to the extent allowed under Section 61.10 of the Colorado Discharge Permit System Regulations.

iii) The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. Permits may be modified during their terms for this cause only as follows:

(A) The permit condition requested to be modified was based on a promulgated effluent limitation guideline, EPA approved water quality standard, or an effluent limitation set forth in 5 CCR 1002-62, § 62 et seq.; and

(B) EPA has revised, withdrawn, or modified that portion of the regulation or effluent limitation guideline on which the permit condition was based, or has approved a Commission action with respect to the water quality standard or effluent limitation on which the permit condition was based; and

(C) The permittee requests modification after the notice of final action by which the EPA effluent limitation guideline, water quality standard, or effluent limitation is revised, withdrawn, or modified; or

(D) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations or effluent limitation guidelines, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the permittee in accordance with this Regulation, within ninety (90) days of judicial remand.

iv) The Division determines that good cause exists to modify a permit condition because of events over which the permittee has no control and for which there is no reasonable available remedy.

v) The permittee has received a variance.

vi) When required to incorporate applicable toxic effluent limitation or standards adopted pursuant to § 307(a) of the Federal act.

vii) When required by the reopener conditions in the permit.

viii) As necessary under 40 C.F.R. 403.8(e), to include a compliance schedule for the development of a pretreatment program.

ix) When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under Section 61.8(2) of the Colorado Discharge Permit System Regulations.

x) To establish a pollutant notification level required in Section 61.8(5) of the Colorado Discharge Permit System Regulations.

xi) To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions, to the extent allowed in Section 61.10 of the Colorado State Discharge Permit System Regulations.

xii) When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

xiii) For any other cause provided in Section 61.10 of the Colorado Discharge Permit System Regulations.

c. At the request of a permittee, the Division may modify or terminate a permit and issue a new permit if the following conditions are met:

i) The Regional Administrator has been notified of the proposed modification or termination and does not object in writing within thirty (30) days of receipt of notification,

ii) The Division finds that the permittee has shown reasonable grounds consistent with the Federal and State statutes and regulations for such modifications or termination;

iii) Requirements of Section 61.15 of the Colorado Discharge Permit System Regulations have been met, and

iv) Requirements of public notice have been met.

d. Permit modification (except for minor modifications), termination or revocation and reissuance actions shall be subject to the requirements of Sections 61.5(2), 61.5(3), 61.6, 61.7 and 61.15 of the Colorado Discharge Permit System Regulations. The Division shall act on a permit modification request, other than minor modification requests, within 180 days of receipt thereof. Except for minor modifications, the terms of the existing permit govern and are enforceable until the newly issued permit is formally modified or revoked and reissued following public notice.

e. Upon consent by the permittee, the Division may make minor permit modifications without following the requirements of Sections 61.5(2), 61.5(3), 61.7, and 61.15 of the Colorado Discharge Permit System Regulations. Minor modifications to permits are limited to:

i) Correcting typographical errors; or

ii) Increasing the frequency of monitoring or reporting by the permittee; or

iii) Changing an interim date in a schedule of compliance, provided the new date of compliance is not more than 120 days after the date specific in the existing permit and does not interfere with attainment of the final compliance date requirement; or

iv) Allowing for a transfer in ownership or operational control of a facility where the Division determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees has been submitted to the Division; or

v) Changing the construction schedule for a discharger which is a new source, but no such change shall affect a discharger's obligation to have all pollution control equipment installed and in operation prior to discharge; or

vi) Deleting a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.

f. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term.

g. The filing of a request by the permittee for a permit modification, revocation and reissuance or termination does not stay any permit condition.

h. All permit modifications and reissuances are subject to the antibacksliding provisions set forth in 61.10(e) through (g).

6. **Oil and Hazardous Substance Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the Clean Water Act.

7. **State Laws**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority granted by Section 510 of the Clean Water Act. Nothing in this permit shall be construed to prevent or limit application of any emergency power of the division.

8. **Permit Violations**

Failure to comply with any terms and/or conditions of this permit shall be a violation of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Except as provided in Parts I.H and K and Part II.A or B, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance (40 CFR 122.41(a)(1)).

9. **Property Rights**

The issuance of this permit does not convey any property or water rights in either real or personal property, or stream flows, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. **Severability**

The provisions of this permit are severable. If any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

11. **Renewal Application**

If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least one hundred eighty (180) days before this permit expires. If the permittee anticipates there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can terminate the permit in accordance with Part II.B.5.

12. **Confidentiality**

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this Subsection (12) shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

13. **Fees**

The permittee is required to submit payment of an annual fee as set forth in the 2005 amendments to the Water Quality Control Act. Section 25-8-502 (l) (b), and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.15 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S. 1973 as amended.

14. **Duration of Permit**

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications.

15. **Section 307 Toxics**

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the Division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

16. **Effect of Permit Issuance**

a. The issuance of a permit does not convey any property rights or any exclusive privilege.

b. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.

c. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or

terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations.

d. Compliance with a permit condition which implements a particular standard for sewage sludge use or disposal shall be an affirmative defense in any enforcement action brought for a violation of that standard for sewage sludge use or disposal.

PART III

Sector-Specific Requirements for Industrial Activity

A. Sector A – Timber Products

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges

The requirements in Sector A apply to stormwater discharges associated with industrial activity from Timber Products facilities as identified by the SIC Codes specified under Sector A in Table A-1 of Appendix A of the permit.

2. Limitation on Coverage

a. Prohibition of Discharges. (See also Part I.A.2) Not covered by this permit: stormwater discharges from areas where there may be contact with the chemical formulations sprayed to provide surface protection. These discharges must be covered by a separate CDPS permit.

b. Allowable Non-Stormwater Discharges. (See also Part I.A.1.b) Also authorized by this permit, provided the non-stormwater component of the discharge is in compliance with the requirements in Part I.D.1 (Practice-based Effluent Limits): discharges from the spray down of lumber and wood product storage yards where no chemical additives are used in the spray-down waters and no chemicals are applied to the wood during storage.

   Source-water used for spray-down water must not contain pollutants in concentrations exceeding the State groundwater and surface water standards.

3. Additional Practice-Based Effluent Limits

Good Housekeeping. (See also Part I.D.1.b) In areas where storage, loading and unloading, and material handling occur, perform good housekeeping to limit the discharge of wood debris, minimize the leachate generated from decaying wood materials, and minimize the generation of dust.

4. Additional SWMP Requirements (see also Part I.F)

a. Drainage Area Site Map. Document in the facility's SWMP where any of the following may be exposed to precipitation or surface runoff: processing areas, treatment chemical storage areas, treated wood and residue storage areas, wet decking areas, dry decking areas, untreated wood and residue storage areas, and treatment equipment storage areas.

b. Inventory of Exposed Materials. Where such information exists, if the permittee's facility has used chlorophenolic, creosote, or chromium-copper-arsenic formulations for wood surface protection or preserving, document in the SWMP the following: areas where contaminated soils, treatment equipment, and stored materials still remain and the management practices employed to minimize the contact of these materials with stormwater runoff.

c. Description of Stormwater Management Controls. Document measures implemented to address the following activities and sources: log, lumber, and wood product storage areas; residue storage areas; loading and unloading areas; material handling areas; chemical storage areas; and equipment and vehicle maintenance, storage, and repair areas. If the permittee's facility performs wood surface protection and preservation activities, address the specific control measures, including any BMPs, for these activities.

5. Additional Inspection Requirements (see also Part I.G)

If the permittee's facility performs wood surface protection and preservation activities, inspect processing areas, transport areas, and treated wood storage areas monthly to assess the usefulness of practices to minimize the deposit of treatment chemicals on unprotected soils and in areas that will come in contact with stormwater discharges.

6. Sector-Specific Benchmarks

Table A-1 identifies benchmarks that apply to the specific subsectors of Sector A. These benchmarks apply to both the facility's primary industrial activity and any co-located industrial activities, which describe the permittee's site activities.

Table A-1

Subsector (The permittee may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector A1. General Sawmills and Planing Mills (SIC 2421)	Chemical Oxygen Demand (COD)	120.0 mg/L
	Total Suspended Solids (TSS)	100 mg/L
	Total Zinc[1]	Hardness Dependent
Subsector A2. Wood Preserving (SIC 2491)	Total Arsenic	0.15 mg/L
	Total Copper[1]	Hardness Dependent
Subsector A3. Log Storage and Handling (SIC 2411)	Total Suspended Solids (TSS)	100 mg/L
Subsector A4. Hardwood Dimension and Flooring Mills; Special Products Sawmills, not elsewhere classified; Millwork, Veneer, Plywood, and Structural Wood; Wood Pallets and Skids; Wood Containers, not elsewhere classified; Wood Buildings and Mobile Homes; Reconstituted Wood Products; and Wood Products Facilities not elsewhere classified (SIC 2426, 2429, 2431-2439 (except 2434), 2441, 2448, 2449, 2451, 2452, 2493, and 2499)	Chemical Oxygen Demand (COD)	120.0 mg/L
	Total Suspended Solids (TSS)	100.0 mg/L

[1] The benchmark values of some metals are dependent on water hardness. The ranges occur in 25 mg/L increments. Hardness Dependent Benchmarks follow in the table below:

Water Hardness Range	Copper (mg/L)	Zinc (mg/L)
0-25 mg/L	0.0038	0.04
25-50 mg/L	0.0056	0.05
50-75 mg/L	0.0090	0.08
75-100 mg/L	0.0123	0.11
100-125 mg/L	0.0156	0.13
125-150 mg/L	0.0189	0.16
150-175 mg/L	0.0221	0.18
175-200 mg/L	0.0253	0.20
200-225 mg/L	0.0285	0.23
225-250 mg/L	0.0316	0.25
250+ mg/L	0.0332	0.26

7. Effluent Limitations Based on Effluent Limitations Guidelines (see also Part I.A.1.b)

Table A-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table A-2[1]		
Industrial Activity		
Discharges resulting from spray down or intentional wetting of logs at wet deck storage areas.	pH	6.0 - 9.0 s.u
	Debris (woody material such as bark, twigs, branches, heartwood, or sapwood)	No discharge of debris that will not pass through a 2.54-cm (1-in.) diameter round opening.

[1] Monitor annually.

B. Sector B – Paper and Allied Products

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector B apply to stormwater discharges associated with industrial activity from Paper and Allied Products Manufacturing facilities, as identified by the SIC Codes specified under Sector B in Table A-1 of Appendix A of the permit.

2. Sector-Specific Benchmarks.

Table B-1.

Subsector (The permittee may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector B1. Paperboard Mills (SIC Code 2631)	Chemical Oxygen Demand (COD)	120 mg/L

C. Sector C – Chemical and Allied Products Manufacturing, and Refining

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector C apply to stormwater discharges associated with industrial activity from Chemical and Allied Products Manufacturing, and Refining facilities, as identified by the SIC Codes specified under Sector C in Table A-1 of Appendix A of the permit.

2. Limitations on Coverage.

a. Prohibition of Non-Stormwater Discharges. (See also Part I.A.2) The following are not covered by this permit: non-stormwater discharges containing inks, paints, or substances (hazardous, nonhazardous, etc.) resulting from an onsite spill, including materials collected in drip pans; wash water from material handling and processing areas; and wash water from drum, tank, or container rinsing and cleaning.

3. Sector-Specific Benchmarks.

Table C-1 identifies benchmarks that apply to the specific subsectors of Sector C. These benchmarks apply to both the permittee's primary industrial activity and any co-located industrial activities.

Table C-1.

Subsector (The permittee may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector C1. Agricultural Chemicals (SIC 2873-2879)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Lead[1]	Hardness Dependent
	Total Iron	1.0 mg/L
	Total Zinc[1]	Hardness Dependent
	Phosphorus	2.0 mg/L
Subsector C2. Industrial Inorganic Chemicals (SIC 2812-2819)	Total Aluminum	0.75 mg/ L
	Total Iron	1.0 mg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L
Subsector C3. Soaps, Detergents, Cosmetics, and Perfumes (SIC 2841-2844)	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Zinc[1]	Hardness Dependent
Subsector C4. Plastics, Synthetics, and Resins (SIC 2821-2824)	Total Zinc[1]	Hardness Dependent

[1] The benchmark values of some metals are dependent on water hardness. The ranges occur in 25 mg/L increments. Hardness Dependent Benchmarks follow in the table below:

Water Hardness Range	**Lead** (mg/L)	**Zinc** (mg/L)
0-25 mg/L	0.014	0.04
25-50 mg/L	0.023	0.05
50-75 mg/L	0.045	0.08
75-100 mg/L	0.069	0.11
100-125 mg/L	0.095	0.13
125-150 mg/L	0.122	0.16
150-175 mg/L	0.151	0.18
175-200 mg/L	0.182	0.20
200-225 mg/L	0.213	0.23
225-250 mg/L	0.246	0.25
250+ mg/L	0.262	0.26

4. Effluent Limitations Based on Effluent Limitations Guidelines (see also Part I.A.1.a)

Table C-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table C-2[1]

Industrial Activity	**Parameter**	**Effluent Limit**
Runoff from phosphate fertilizer manufacturing facilities that comes into contact with any raw materials, finished product, by-products or waste products (SIC 2874)	Total Phosphorus (as P)	105.0 mg/L, daily maximum
		35 mg/L, 30-day avg.
	Fluoride	75.0 mg/L, daily maximum
		25.0 mg/L, 30-day avg.

[1] Monitor annually.

D. Sector D – Asphalt Paving and Roofing Materials and Lubricant Manufacturing

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector D apply to stormwater discharges associated with industrial activity from Asphalt Paving and Roofing Materials and Lubricant Manufacturing facilities, as identified by the SIC Codes specified under Sector D in Table A-1 of Appendix A of the permit.

2. Limitations on Coverage.

The following stormwater discharges associated with industrial activity are not authorized by this permit (See also Part I.A.2)

a. Discharges from petroleum refining facilities, including those that manufacture asphalt or asphalt products, that are subject to nationally established effluent limitation guidelines found in 40 CFR Part 419 (Petroleum Refining); or

b. Discharges from oil recycling facilities; or

c. Discharges associated with fats and oils rendering.

3. Mobile Asphalt Batch Plants

Permit certifications for mobile asphalt batch plants (i.e., SIC code 2951) may be issued for a specific plant, with the equipment defined as the facility, which allows existing batch plants to move around the state without re-applying for permit coverage at each new location. Permittees must notify the Division in writing each time the mobile plant is moved, and must meet all permit requirements, terms and conditions for each location.

4. Sector-Specific Benchmarks

Table D-1 identifies benchmarks that apply to the specific subsectors of Sector D. These benchmarks apply to both the facility's primary industrial activity and any co-located industrial activities, which describe the permitee's site activities.

Table D-1.

Subsector	Parameter	Benchmark Monitoring Concentration
Subsector D1. Asphalt Paving and Roofing Materials (SIC 2951, 2952)	Total Suspended Solids (TSS)	100 mg/L

5. Effluent Limitations Based on Effluent Limitations Guidelines (see also Part I.A.1.a)

Table D-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table D-2[1]

Industrial Activity	Parameter	Effluent Limit
Discharges from asphalt emulsion facilities.	Total Suspended Solids (TSS)	23.0 mg/L, daily maximum 15.0 mg/L, 30-day avg.
	pH	6.0 - 9.0 s.u.
	Oil and Grease	15.0 mg/L, daily maximum
		10 mg/L, 30-day avg.

[1]Monitor annually.

E. Sector E – Glass, Clay, Cement, Concrete, and Gypsum Products

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector E apply to stormwater discharges associated with industrial activity from Glass, Clay, Cement, Concrete, and Gypsum Products facilities, as identified by the SIC Codes specified under Sector E in Table A-1 of Appendix A of the permit.

2. Mobile Concrete Batch Plants

Permit certifications for mobile concrete batch plants (i.e., SIC code 3273) may be issued for a specific plant, with the equipment defined as the facility, which allows existing batch plants to move around the state without re-applying for permit coverage at each new location. Permittees must notify the Division in writing each time the mobile plant is moved, and must meet all permit requirements, terms and conditions for each location.

3. Additional Practice-Based Effluent Limits.

a. Good Housekeeping Measures. (See also Part I.D.1.b) With good housekeeping, prevent or minimize the discharge of spilled cement, aggregate (including sand or gravel), kiln dust, fly ash, settled dust, or other significant material in stormwater from paved portions of the site that are exposed to stormwater. Consider sweeping regularly or using other equivalent measures to minimize the presence of these materials. Indicate in the facility SWMP the frequency of sweeping or equivalent measures. Determine the frequency based on the amount of industrial activity occurring in the area and the frequency of precipitation, but it must be performed at least once a month if cement, aggregate, kiln dust, fly ash, or settled dust are being handled or processed. The permittee must also prevent the exposure of fine granular solids (cement, fly ash, kiln dust, etc.) to stormwater, where practicable, by storing these materials in enclosed silos, hoppers, or buildings, or under other covering.

4. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Document in the SWMP the locations of the following, as applicable: bag house or other dust control device; recycle/sedimentation pond, clarifier, or other device used for the treatment of process wastewater; and the areas that drain to the treatment device.

b. Certification. For facilities producing ready-mix concrete, concrete block, brick, or similar products, include in the non-stormwater discharge certification a description of measures that ensure that process waste waters resulting from washing trucks, mixers, transport buckets, forms, or other equipment are discharged in accordance with CDPS requirements or are recycled.

5. Sector-Specific Benchmarks.

Table E-1 identifies benchmarks that apply to the specific subsectors of Sector E. These benchmarks apply to both the facility's primary industrial activity and any co-located industrial activities, which describe the permittee's site activities.

Table E-1.		
Subsector (The permittee may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Cutoff Concentration**
Subsector E1. Clay Product Manufacturers (SIC 3251-3259, 3261-3269)	Total Aluminum	0.75 mg/L
Subsector E2. Concrete and Gypsum Product Manufacturers (SIC 3271-3275)	Total Suspended Solids (TSS)	100 mg/L
	Total Iron	1.0 mg/L

6. Effluent Limitations Based on Effluent Limitations Guidelines (see also Part I.A.1.a)

Table E-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table E-2[1]		
Industrial Activity	**Parameter**	**Effluent Limit**
Discharges from material storage piles at cement manufacturing facilities	Total Suspended Solids (TSS)	50 mg/L, daily maximum
	pH	6.0 - 9.0 s.u.

[1]Monitor annually.

F. Sector F – Primary Metals

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector F apply to stormwater discharges associated with industrial activity from Primary Metals facilities, as identified by the SIC Codes specified under Sector F in Table A-1 of Appendix A of the permit.

2. Additional Practice-Based Effluent Limits

a. Good Housekeeping Measures. (See also Part I.D.1.b) As part of the facility's good housekeeping program, include a cleaning and maintenance program for all impervious areas of the facility where particulate matter, dust, or debris may accumulate, especially areas where material loading and unloading, storage, handling, and processing occur; and, where practicable, the paving of areas where vehicle traffic or material storage occur but where vegetative or other stabilization methods are not practicable (institute a sweeping program in these areas too). For unstabilized areas where sweeping is not practicable, consider using stormwater management devices such as sediment traps, vegetative buffer strips, filter fabric fence, sediment filtering boom, gravel outlet protection, or other equivalent measures that effectively trap or remove sediment.

3. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Identify in the SWMP where any of the following activities may be exposed to precipitation or surface runoff: storage or disposal of wastes such as spent solvents and baths, sand, slag and dross; liquid storage tanks and drums; processing areas including pollution control equipment (e.g., baghouses); and storage areas of raw material such as coal, coke, scrap, sand, fluxes, refractories, or metal in any form. In addition, indicate where an accumulation of significant amounts of particulate matter could occur from such sources as furnace or oven emissions, losses from coal and coke handling operations, etc., and could result in a discharge of pollutants to waters of the United States.

b. Inventory of Exposed Material. Include in the inventory of materials handled at the site that potentially may be exposed to precipitation or runoff, areas where deposition of particulate matter from process air emissions or losses during material-handling activities are possible

4. Additional Inspection Requirements (see also Part I.G).

As part of conducting the permittee's quarterly facility inspections, address all potential sources of pollutants, including (if applicable) air pollution control equipment (e.g., baghouses, electrostatic precipitators, scrubbers, and cyclones), for any signs of degradation (e.g., leaks, corrosion, or improper operation) that could limit their efficiency and lead to excessive emissions. Consider monitoring air flow at inlets and outlets (or use equivalent measures) to check for leaks (e.g., particulate deposition) or blockage in ducts. Also inspect all process and material handling equipment (e.g., conveyors, cranes, and vehicles) for leaks, drips, or the potential loss of material; and material storage areas (e.g., piles, bins, or hoppers for storing coke, coal, scrap, or slag, as well as chemicals stored in tanks and drums) for signs of material losses due to wind or stormwater runoff.

5. Sector-Specific Benchmarks.

Table .F-1.		
Subsector (The permittee may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Cutoff Concentration**
Subsector F1. Steel Works, Blast Furnaces, and Rolling and Finishing Mills (SIC 3312-3317)	Total Aluminum	0.75 mg/L
	Total Zinc[1]	Hardness Dependent
Subsector F2. Iron and Steel Foundries (SIC 3321-3325)	Total Aluminum	0.75 mg/L
	Total Suspended Solids (TSS)	100 mg/L
	Total Copper[1]	Hardness Dependent
	Total Iron	1.0 mg/L
	Total Zinc[1]	Hardness Dependent
Subsector F3. Rolling, Drawing, and Extruding of Nonferrous Metals (SIC 3351-3357)	Total Copper[1]	Hardness Dependent
	Total Zinc[1]	Hardness Dependent
Subsector F4. Nonferrous Foundries (SIC 3363-3369)	Total Copper[1]	Hardness Dependent
	Total Zinc[1]	Hardness Dependent

[1] The benchmark values of some metals are dependent on water hardness. The ranges occur in 25 mg/L increments. Hardness Dependent Benchmarks follow in the table below:

Water Hardness Range	**Copper** (mg/L)	**Zinc** (mg/L)
0-25 mg/L	0.0038	0.04
25-50 mg/L	0.0056	0.05
50-75 mg/L	0.0090	0.08
75-100 mg/L	0.0123	0.11
100-125 mg/L	0.0156	0.13
125-150 mg/L	0.0189	0.16
150-175 mg/L	0.0221	0.18
175-200 mg/L	0.0253	0.20
200-225 mg/L	0.0285	0.23
225-250 mg/L	0.0316	0.25
250+ mg/L	0.0332	0.26

I. Sector I – Oil and Gas Extraction

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector I apply to stormwater discharges associated with industrial activity from Oil and Gas Extraction facilities as identified by the SIC Codes specified under Sector I in Table A-1 of Appendix A of the permit. Discharges of stormwater runoff from field activities or operations associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities are exempt from CDPS permit coverage unless, in accordance with 40 CFR 122.26(c)(1)(iii), the facility:

- Has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 117.21 or 40 CFR 302.6 at any time since November 16, 1987; or
- Has had a discharge of stormwater resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6 at any time since November 16, 1987; or
- Contributes to a violation of a water quality standard.

Any stormwater discharges that require permit coverage as a result of meeting one of the conditions of 122.26(c)(1)(iii) may be covered under this permit unless otherwise required to obtain coverage under an alternative CDPS general permit or an individual CDPS permit as specified in Part I.A.3.c.

2. Limitations on Coverage.

a. Stormwater Discharges Subject to Effluent Limitation Guidelines. (See also Part I.A.2.e) This permit does not authorize stormwater discharges from petroleum drilling operations that are subject to nationally established effluent limitation guidelines found at 40 CFR Part 435, respectively.

b. Non-Stormwater Discharges. This permit does not authorize discharges of vehicle and equipment wash water, including tank-cleaning operations. Alternatively, wash water discharges must be authorized under a separate CDPS permit, or be discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements.

3. Additional Practice-Based Effluent Limits.

a. Vegetative Controls. Implement vegetative practices designed to preserve existing vegetation, where attainable, and revegetate open areas as soon as practicable after grade drilling. Consider the following (or equivalent measures): temporary or permanent seeding, mulching, sod stabilization, vegetative buffer strips, and tree protection practices. Begin implementing appropriate vegetative practices on all disturbed areas within 14 days following the last activity in that area.

4. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Document in the facility's SWMP where any of the following may be exposed to precipitation or surface runoff: Reportable Quantity (RQ) releases; locations used for the treatment, storage, or disposal of wastes; processing areas and storage areas; chemical mixing areas; construction and drilling areas; all areas subject to the effluent guidelines requirements for "No Discharge" in accordance with 40 CFR 435.32; and the structural controls to achieve compliance with the "No Discharge" requirements.

b. Potential Pollutant Sources. In addition, document in the facility's SWMP the following sources and activities that have potential pollutants associated with them: chemical, cement, mud, or gel mixing activities; drilling or mining activities; and equipment cleaning and rehabilitation activities. In addition, include information about the reportable quantity (RQ) release that triggered the permit application requirements: the nature of the release (e.g., spill of oil from a drum storage area), amount of oil or hazardous substance released, amount of substance recovered, date of the release, cause of the release (e.g., poor handling techniques and lack of containment in the area), areas affected by the release (i.e., land and water), procedure to clean up release, actions or procedures implemented to prevent or improve response to a release, and remaining potential contamination of stormwater from release (taking into account human health risks, the control of drinking water intakes, and the designated uses of the receiving water).

c. Erosion and Sedimentation Control. Unless covered by the current General Permit for Stormwater Discharges Associated with Construction Activity , the additional documentation requirements for sediment and erosion controls for well drillings and sand/shale mining areas include the following:

   i. *Site Description.* Also include a description in the facility's SWMP of the nature of the exploration activity, estimates of the total area of site and area disturbed due to exploration activity, an estimate of runoff coefficient of the site, a site drainage map, including approximate slopes, and the names of all receiving waters.

   ii. *Vegetative Controls.* Document vegetative practices used consistent with Part III.I.3 in the SWMP.

5. Additional Inspection Requirements (see also Part I.G).

All erosion and sedimentation control measures must be inspected every 7 days.

K. Sector K – Hazardous Waste Treatment, Storage, or Disposal Facilities

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector K apply to stormwater discharges associated with industrial activity from Hazardous Waste Treatment, Storage, or Disposal facilities (TSDFs) as identified by the Activity Code specified under Sector K in Table A-1 of Appendix A of the permit.

2. Industrial Activities Covered by Sector K.

This permit authorizes stormwater discharges associated with industrial activity from facilities that treat, store, or dispose of hazardous wastes, including those that are operating under interim status or a permit under subtitle C of RCRA. Disposal facilities that have been properly closed and capped, and have no significant materials exposed to stormwater, are considered inactive and do not require permits.

3. Limitations on Coverage.

a. Prohibition of Non-Stormwater Discharges. (See also Part I.A.2) The following are not authorized by this permit: leachate, gas collection condensate, drained free liquids; contaminated ground water, laboratory-derived wastewater, and contact wash water from washing truck and railcar exteriors and surface areas that have come indirect contact with solid waste at the landfill facility.

4. Definitions.

a. Contaminated stormwater - stormwater that comes into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater as defined in Part III.K.4.d. Some specific areas of a landfill that may produce contaminated stormwater include (but are not limited to) the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment, or machinery that has been in direct contact with the waste; and waste dumping areas.

b. Drained free liquids - aqueous wastes drained from waste containers (e.g., drums) prior to landfilling.

c. Landfill - an area of land or an excavation in which wastes are placed for permanent disposal, but that is not a land application or land treatment unit, surface impoundment, underground injection well, waste pile, salt dome formation, salt bed formation, underground mine, or cave as these terms are defined in 40 CFR 257.2, 258.2, and 260.10.

d. Landfill wastewater - as defined in 40 CFR Part 445 (Landfills Point Source Category), all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated stormwater, contaminated groundwater, and wastewater from recovery pumping wells. Landfill wastewater includes, but is not limited to, leachate, gas collection condensate, drained free liquids, laboratory derived wastewater, contaminated stormwater, and contact wash water from washing truck, equipment, and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility.

e. Leachate - liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.

f. Non-contaminated stormwater - stormwater that does not come into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater as defined in Part III.K.4.d. Non-contaminated stormwater includes stormwater that flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

5. Sector-Specific Benchmarks

Table K-1 identifies benchmarks that apply to the specific subsectors of Sector K. These benchmarks apply to both the facility's primary industrial activity and any co-located industrial activities, which describe the permittee's site activities.

Table K-1.

Subsector (The permittee may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector K1. ALL - Industrial Activity Code "HZ". Benchmarks only applicable to discharges not subject to effluent limitations in 40 CFR Part 445 Subpart A (see below).	Ammonia	2.14 mg/L
	Total Magnesium	0.064 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L
	Total Arsenic	0.15 mg/L
	Total Cadmium[1]	Hardness Dependent
	Total Cyanide	0.022 mg/ L
	Total Lead[1]	Hardness Dependent
	Total Mercury	0.0014 mg/ L
	Total Selenium	0.005 mg/L
	Total Silver[1]	Hardness Dependent

[1] The benchmark values of some metals are dependent on water hardness. The ranges occur in 25 mg/L increments. Hardness Dependent Benchmarks follow in the table below:

Water Hardness Range	Cadmium (mg/L)	Lead (mg/L)	Silver (mg/L)
0-25 mg/L	0.0005	0.014	0.0007
25-50 mg/L	0.0008	0.023	0.0007
50-75 mg/L	0.0013	0.045	0.0017
75-100 mg/L	0.0018	0.069	0.0030
100-125 mg/L	0.0023	0.095	0.0046
125-150 mg/L	0.0029	0.122	0.0065
150-175 mg/L	0.0034	0.151	0.0087
175-200 mg/L	0.0039	0.182	0.0112
200-225 mg/L	0.0045	0.213	0.0138
225-250 mg/L	0.0050	0.246	0.0168
250+ mg/L	0.0053	0.262	0.0183

6. Effluent Limitations Based on Effluent Limitations Guidelines (see also Part I.A.1.a)

Table K-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table K-2[1]

Industrial Activity	Parameter	Effluent Limit
Discharges from hazardous waste landfills subject to effluent limitations in 40 CFR Part 445 Subpart A (see footnote).	Biochemical Oxygen Demand (BOD_5)	220 mg/L, daily maximum
		56 mg/L, monthly avg. maximum
	Total Suspended Solids (TSS)	88 mg/L, daily maximum
		27 mg/L, monthly avg. maximum
	Ammonia	10 mg/L, daily maximum
		4.9 mg/L, monthly avg. maximum
	Alpha Terpineol	0.042 mg/L, daily maximum
		0.019 mg/L, monthly avg. maximum
	Aniline	0.024 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Benzoic Acid	0.119 mg/L, daily maximum
		0.073 mg/L, monthly avg. maximum
	Naphthalene	0.059 mg/L, daily maximum
		0.022 mg/L, monthly avg. maximum
	p-Cresol	0.024 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Phenol	0.048 mg/L, daily maximum
		0.029 mg/L, monthly avg. maximum
	Pyridine	0.072 mg/L, daily maximum
		0.025 mg/L, monthly avg. maximum
	Total Arsenic	1.1 mg/L, daily maximum
		0.54 mg/L, monthly avg. maximum
	Total Chromium	1.1 mg/L, daily maximum
		0.46 mg/L, monthly avg. maximum
	Total Zinc	0.535 mg/L, daily maximum
		0.296 mg/L, monthly avg. maximum
	pH	Within the range of 6-9 standard pH units (s.u.)

[1] Monitor annually. As set forth at 40 CFR Part 445 Subpart A, these numeric limitations apply to contaminated stormwater discharges from hazardous waste landfills subject to the provisions of RCRA Subtitle C at 40 CFR Parts 264 (Subpart N) and 265 (Subpart N) except for any of the following facilities:

(a) landfills operated in conjunction with other industrial or commercial operations when the landfill receives only wastes generated by the industrial or commercial operation directly associated with the landfill;

(b) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes, provided that the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR Subchapter N as the industrial or commercial operation or that the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation;

(c) Landfills operated in conjunction with Centralized Waste Treatment (CWT) facilities subject to 40 CFR Part 437, so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills; or

(d) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities, so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

L. Sector L – Landfills, Land Application Sites, and Open Dumps

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector L apply to stormwater discharges associated with industrial activity from Landfills and Land Application Sites and Open Dumps as identified by the Activity Code specified under Sector L in Table A-1 of Appendix A of the permit.

2. Industrial Activities Covered by Sector L.

This permit may authorize stormwater discharges for Sector L facilities associated with waste disposal at landfills, land application sites, and open dumps that receive or have received industrial waste, as defined at 5 CCR 1002-61.3(2)(e)(iii)(E), including sites subject to regulation under Subtitle D of RCRA. This permit does not cover discharges from landfills that receive only municipal wastes, unless otherwise designated by the Division in accordance with Part I.A.1.a.ii of this permit.

3. Limitations on Coverage.

a. Prohibition of Non-Stormwater Discharges. (See also Part I.A.2) The following discharges are not authorized by this permit: leachate, gas collection condensate, drained free liquids; contaminated ground water, laboratory wastewater, and contact wash water from washing truck and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility.

4. Definitions.

a. Contaminated stormwater - stormwater that comes into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater. Some areas of a landfill that may produce contaminated stormwater include (but are not limited to) the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment, or machinery that has been in direct contact with the waste; and waste dumping areas.

b. Drained free liquids - aqueous wastes drained from waste containers (e.g., drums) prior to landfilling.

c. Landfill wastewater - as defined in 40 CFR Part 445 (Landfills Point Source Category) all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated stormwater, contaminated groundwater, and wastewater from recovery pumping wells. Landfill process wastewater includes, but is not limited to, leachate; gas collection condensate; drained free liquids; laboratory-derived wastewater; contaminated stormwater; and contact wash water from washing truck, equipment, and railcar exteriors and surface areas that have come in direct contact with solid waste at the landfill facility.

d. Leachate - liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.

e. Non-contaminated stormwater - stormwater that does not come into direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater. Non-contaminated stormwater includes stormwater that flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

5. Additional Practice-Based Effluent Limits. (see also Part I.D.1)

a. Preventive Maintenance Program. As part of the facility's preventive maintenance program, maintain the following: all elements of leachate collection and treatment systems, to prevent commingling of leachate with stormwater; the integrity and effectiveness of any intermediate or final cover (including repairing the cover as necessary), to minimize the effects of settlement, sinking, and erosion.

b. Erosion and Sedimentation Control. Provide temporary stabilization (e.g., temporary seeding, mulching, and placing geotextiles on the inactive portions of stockpiles) for the following: materials stockpiled for daily, intermediate, and final cover; inactive areas of the landfill or open dump; landfills or open dump areas that have gotten final covers but where vegetation has yet to establish itself; and land application sites where waste application has been completed but final vegetation has not yet been established.

c. Unauthorized Discharge Test Certification. The discharge test and certification must also be conducted for the presence of leachate and vehicle wash water.

6. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Document in the facility's SWMP where any of the following may be exposed to precipitation or surface runoff: active and closed landfill cells or trenches, active and closed land application areas, locations where open dumping is occurring or has occurred, locations of any known leachate springs or other areas where uncontrolled leachate may commingle with runoff, and leachate collection and handling systems.

b. Summary of Potential Pollutant Sources. Document in the facility's SWMP the following sources and activities that have potential pollutants associated with them: fertilizer, herbicide, and pesticide application; earth and soil moving; waste hauling and loading or unloading; outdoor storage of significant materials, including daily, interim, and final cover material stockpiles as well as temporary waste storage areas; exposure of active and inactive landfill and land application areas; uncontrolled leachate flows; and failure or leaks from leachate collection and treatment systems.

7. Additional Inspection Requirements (see also Part I.G)

a. Inspections of Active Sites. Inspect operating landfills, open dumps, and land application sites at least once every month. Focus on areas of landfills that have not yet been finally stabilized; active land application areas, areas used for storage of material and wastes that are exposed to precipitation, stabilization, and structural control measures; leachate collection and treatment systems; and locations where equipment and waste trucks enter and exit the site. Ensure that sediment and erosion control measures are operating properly. For stabilized sites and areas where land application has been completed, conduct inspections at least once every quarter, consistent with Part I.G of the permit.

b. Inspections of Inactive Sites. Inspect inactive landfills, open dumps, and land application sites at least quarterly, consistent with Part I.G of the permit. Qualified personnel must inspect landfill (or open dump) stabilization and structural erosion control measures, leachate collection and treatment systems, and all closed land application areas.

8. Additional Post-Authorization Documentation Requirements.

a. Recordkeeping and Internal Reporting. Keep records with the facility's SWMP of the types of wastes disposed of in each cell or trench of a landfill or open dump. For land application sites, track the types and quantities of wastes applied in specific areas.

9. Sector-Specific Benchmarks

Table L-1 identifies benchmarks that apply to the specific subsectors of Sector L. These benchmarks apply to both the facility's primary industrial activity and any co-located industrial activities, which describe the site activities.

Table L-1.		
Subsector (The permittee may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration[1]**
Subsector L1. All Landfill, Land Application Sites and Open Dumps (Industrial Activity Code "LF")	Total Suspended Solids (TSS)	100 mg/L
Subsector L2. All Landfill, Land Application Sites and Open Dumps, except Municipal Solid Waste Landfill (MSWLF) Areas Closed in Accordance with 40 CFR 258.60 (Industrial Activity Code "LF")	Total Iron	1.0 mg/L

[1]Benchmark monitoring required only for discharges not subject to effluent limitations in 40 CFR Part 445 Subpart B (see Table L-2 above).

10. Effluent Limitations Based on Effluent Limitations Guidelines (see also Part I.A.1.a)

Table L-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table L-2[1]		
Industrial Activity	**Parameter**	**Effluent Limit**
Discharges from non-hazardous waste landfills subject to effluent limitations in 40 CFR Part 445 Subpart B.	Biochemical Oxygen Demand (BOD_5)	140 mg/L, daily maximum
		37 mg/L, monthly avg. maximum
	Total Suspended Solids (TSS)	88 mg/L, daily maximum
		27 mg/L, monthly avg. maximum
	Ammonia	10 mg/L, daily maximum
		4.9 mg/L, monthly avg. maximum
	Alpha Terpineol	0.033 mg/L, daily maximum
		0.016 mg/L monthly avg. maximum
	Benzoic Acid	0.12 mg/L, daily maximum
		0.071 mg/L, monthly avg. maximum
	p-Cresol	0.025 mg/L, daily maximum
		0.014 mg/L, monthly avg. maximum
	Phenol	0.026 mg/L, daily maximum
		0.015 mg/L, monthly avg. maximum
	Total Zinc	0.20 mg/L, daily maximum
		0.11 mg/L, monthly avg. maximum
	pH	Within the range of 6-9 standard pH units (s.u.)

[1] Monitor annually. As set forth at 40 CFR Part 445 Subpart B, these numeric limitations apply to contaminated stormwater discharges from MSWLFs that have not been closed in accordance with 40 CFR 258.60, and to contaminated stormwater discharges from those landfills that are subject to the provisions of 40 CFR Part 257 except for discharges from any of the following facilities:

(a) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives only wastes generated by the industrial or commercial operation directly associated with the landfill;
(b) landfills operated in conjunction with other industrial or commercial operations, when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes, provided that the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR Subchapter N as the industrial or commercial operation, or that the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation;
(c) landfills operated in conjunction with CWT facilities subject to 40 CFR Part 437, so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills; or
(d) landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities, so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

M. Sector M – Automobile Salvage Yards

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector M apply to stormwater discharges associated with industrial activity from Automobile Salvage Yards as identified by the SIC Code specified under Sector M in Table A-1 of Appendix A of this permit.

2. Additional Practice-Based Effluent Limits. (see also Part I.D.1)

a. Minimize Exposure. Consider the following exposure minimization practices: remove mercury switches, batteries and wheel weights from vehicles upon arrival at the site (or as soon thereafter as feasible)

b. Spill and Leak Prevention Procedures. Drain vehicles intended to be dismantled of all fluids upon arrival at the site (or as soon thereafter as feasible), or employ some other equivalent means to prevent spills and leaks.

c. Employee Training. If applicable to the permittee's facility, address the following areas (at a minimum) in the permittee's employee training program: proper handling (collection, storage, and disposal) of oil, used mineral spirits, anti-freeze, mercury switches, batteries and solvents.

d. Management of Runoff. Consider the following management practices: berms or drainage ditches on the property line (to help prevent run-on from neighboring properties); berms for uncovered outdoor storage of oily parts, engine blocks, and above-ground liquid storage; installation of detention ponds; and installation of filtering devices and oil and water separators.

3. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Identify locations used for dismantling, storage, and maintenance of used motor vehicle parts. Also, identify where any of the following may be exposed to precipitation or surface runoff: dismantling areas, parts (e.g., engine blocks, tires, hubcaps, batteries, hoods, mufflers) storage areas, and liquid storage tanks and drums for fuel and other fluids.

b. Potential Pollutant Sources. Assess the potential for the following to contribute pollutants to stormwater discharges: vehicle storage areas, dismantling areas, parts storage areas (e.g., engine blocks, tires, hubcaps, batteries, hoods, mufflers), and fueling stations.

4. Additional Inspection Requirements (see also Part I.G)

Immediately (or as soon thereafter as feasible), inspect vehicles arriving at the site for leaks. Inspect quarterly for signs of leakage all equipment containing oily parts, hydraulic fluids, any other types of fluids, or mercury switches. Also, inspect quarterly for signs of leakage all vessels and areas where hazardous materials and general automotive fluids are stored, including, but not limited to, mercury switches, brake fluid, transmission fluid, radiator water, and antifreeze.

5. Sector-Specific Benchmarks.

Table M-1.		
Subsector (The permittee may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector M1. Automobile Salvage Yards (SIC 5015)	Total Suspended Solids (TSS)	100 mg/L
	Total Aluminum	0.75 mg/L
	Total Iron	1.0 mg/L
	Total Lead[1]	Hardness Dependent

[1] The benchmark values of some metals are dependent on water hardness. The ranges occur in 25 mg/L increments. Hardness Dependent Benchmarks follow in the table below:

Water Hardness Range	**Lead** (mg/L)
0-25 mg/L	0.014
25-50 mg/L	0.023
50-75 mg/L	0.045
75-100 mg/L	0.069
100-125 mg/L	0.095
125-150 mg/L	0.122
150-175 mg/L	0.151
175-200 mg/L	0.182
200-225 mg/L	0.213
225-250 mg/L	0.246
250+ mg/L	0.262

N. Sector N – Scrap Recycling and Waste Recycling Facilities

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector N apply to stormwater discharges associated with industrial activity from Scrap Recycling and Waste Recycling facilities as identified by the SIC Code specified under Sector N in Table A-1 of Appendix A of the permit.

2. Limitation on Coverage.

Separate permit requirements have been established for recycling facilities that only receive source-separated recyclable materials primarily from non-industrial and residential sources (i.e., common consumer products including paper, newspaper, glass, cardboard, plastic containers, and aluminum and tin cans). This includes recycling facilities commonly referred to as material recovery facilities (MRF).

a. Prohibition of Non-Stormwater Discharges. (See also Part I.A.2) Non-stormwater discharges from turnings containment areas are not covered by this permit. Discharges from containment areas in the absence of a storm event are prohibited unless covered by a separate CDPS permit.

3. Additional Practice-Based Effluent Limits. (see also Part I.D.1)

a. Scrap and Waste Recycling Facilities (Non-Source Separated, Nonliquid Recyclable Materials). Requirements for facilities that receive, process, and do wholesale distribution of nonliquid recyclable wastes (e.g., ferrous and nonferrous metals, plastics, glass, cardboard, and paper). These facilities may receive both nonrecyclable and recyclable materials. This section is not intended for those facilities that accept recyclables only from primarily non-industrial and residential sources.

i. Inbound Recyclable and Waste Material Control Program. Minimize the chance of accepting materials that could be significant sources of pollutants by conducting inspections of inbound recyclables and waste materials. Following are some control measure options: (a) provide information and education to suppliers of scrap and recyclable waste materials on draining and properly disposing of residual fluids (e.g., from vehicles and equipment engines, radiators and transmissions, oil filled transformers, and individual containers or drums) and removal of mercury switches from vehicles before delivery to the permittee's facility; (b) consider removing mercury switches, batteries and wheel weights from vehicles upon arrival at the site (or as soon thereafter as feasible) (c) establish procedures to minimize the potential of any residual fluids from coming into contact with precipitation or runoff; (d) establish procedures for accepting scrap lead-acid batteries (additional requirements for the handling, storage, and disposal or recycling of batteries are contained in the scrap lead-acid battery program provisions in Part III.N.3.a.vi); (e) provide training targeted for those personnel engaged in the inspection and acceptance of inbound recyclable materials; and (f) establish procedures to ensure that liquid wastes, including used oil, are stored in materially compatible and non-leaking containers and are disposed of or recycled in accordance with the Resource Conservation and Recovery Act (RCRA).

ii. Scrap and Waste Material Stockpiles and Storage (Outdoor). Minimize contact of stormwater runoff with stockpiled materials, processed materials, and nonrecyclable wastes. Following are some control measure options: (a) permanent or semi-permanent covers; (b) sediment traps, vegetated swales and strips, catch basin filters, and sand filters to facilitate settling or filtering of pollutants; (c) dikes, berms, containment trenches, culverts, and surface grading to divert runoff from storage areas; (d) silt fencing; and (e) oil and

water separators, sumps, and dry absorbents for areas where potential sources of residual fluids are stockpiled (e.g., automobile engine storage areas).

iii. Stockpiling of Turnings Exposed to Cutting Fluids (Outdoor Storage). Minimize contact of surface runoff with residual cutting fluids by: (a) storing all turnings exposed to cutting fluids under some form of permanent or semi-permanent cover, or (b) establishing dedicated containment areas for all turnings that have been exposed to cutting fluids. Any containment areas must be constructed of concrete, asphalt, or other equivalent types of impermeable material and include a barrier (e.g., berms, curbing, elevated pads) to prevent contact with stormwater run-on. Stormwater runoff from these areas can be discharged, provided that any runoff is first collected and treated by an oil and water separator or its equivalent. The permittee must regularly maintain the oil and water separator (or its equivalent) and properly dispose of or recycle collected residual fluids.

iv. Scrap and Waste Material Stockpiles and Storage (Covered or Indoor Storage). Minimize contact of residual liquids and particulate matter from materials stored indoors or under cover with surface runoff. Following are some control measure options: (a) good housekeeping measures, including the use of dry absorbents or wet vacuuming to contain, dispose of, or recycle residual liquids originating from recyclable containers, or mercury spill kits for spills from storage of mercury switches; (b) not allowing wash water from tipping floors or other processing areas to discharge to the storm sewer system; and (c) disconnecting or sealing off all floor drains connected to the storm sewer system.

v. Scrap and Recyclable Waste Processing Areas. Minimize surface runoff from coming in contact with scrap processing equipment. Pay attention to operations that generate visible amounts of particulate residue (e.g., shredding) to minimize the contact of accumulated particulate matter and residual fluids with runoff (i.e., through good housekeeping, preventive maintenance, etc.). Following are some control measure options: (a) regularly inspect equipment for spills or leaks and malfunctioning, worn, or corroded parts or equipment; (b) establish a preventive maintenance program for processing equipment; (c) use dry-absorbents or other cleanup practices to collect and dispose of or recycle spilled or leaking fluids or use mercury spill kits for spills from storage of mercury switches; (d) on unattended hydraulic reservoirs over 150 gallons in capacity, install protection devices such as low-level alarms or equivalent devices, or secondary containment that can hold the entire volume of the reservoir; (e) containment or diversion structures such as dikes, berms, culverts, trenches, elevated concrete pads, and grading to minimize contact of stormwater runoff with outdoor processing equipment or stored materials; (f) oil and water separators or sumps; (g) permanent or semi-permanent covers in processing areas where there are residual fluids and grease; (h) retention or detention ponds or basins; sediment traps, and vegetated swales or strips (for pollutant settling and filtration); (i) catch basin filters or sand filters.

vi. Scrap Lead-Acid Battery Program. Properly handle, store, and dispose of scrap lead-acid batteries. Following are some control measure options (a) segregate scrap lead-acid batteries from other scrap materials; (b) properly handle, store, and dispose of cracked or broken batteries; (c) collect and dispose of leaking lead-acid battery fluid; (d) minimize or eliminate (if possible) exposure of scrap lead-acid batteries to precipitation or runoff; and (e) provide employee training for the management of scrap batteries.

vii. Spill Prevention and Response Procedures. Install alarms and/or pump shutoff systems on outdoor equipment with hydraulic reservoirs exceeding 150 gallons in the event of a line break. Alternatively, a secondary containment system capable of holding the entire contents of the reservoir plus room for precipitation can be used. Use a mercury spill kit for any release of mercury from switches, anti-lock brake systems, and switch storage areas.

viii. Supplier Notification Program. As appropriate, notify major suppliers, which scrap materials will not be accepted at the facility or will be accepted only under certain conditions.

b. Waste Recycling Facilities (Liquid Recyclable Materials).

i. Waste Material Storage (Indoor). Minimize or eliminate contact between residual liquids from waste materials stored indoors and from surface runoff. The plan may refer to applicable portions of other existing plans, such as Spill Prevention, Control, and Countermeasure (SPCC) plans required under 40 CFR Part 112. Following are some control measure options (a) procedures for material handling (including labeling and marking); (b) clean up spills and leaks with dry absorbent materials, a wet vacuum system; (c) appropriate containment structures (trenching, curbing, gutters, etc.); and (d) a drainage system, including appurtenances (e.g., pumps or ejectors, manually operated valves), to handle discharges from diked or bermed areas. Drainage should be discharged to an appropriate treatment facility or sanitary sewer system, or otherwise disposed of properly. These discharges may require coverage under a separate CDPS wastewater permit or industrial user permit under the pretreatment program.

ii. Waste Material Storage (Outdoor). Minimize contact between stored residual liquids and precipitation or runoff. The plan may refer to applicable portions of other existing plans, such as SPCC plans required under 40 CFR Part 112. Discharges of precipitation from containment areas containing used oil must also be in accordance with applicable sections of 40 CFR Part 112. Following are some control measure options (a) appropriate containment structures (e.g., dikes, berms, curbing, pits) to store the volume of the largest tank, with sufficient extra capacity for precipitation; (b) drainage control and other diversionary structures; (c) corrosion protection and/or leak detection systems for storage tanks; and (d) dry-absorbent materials or a wet vacuum system to collect spills.

iii. Trucks and Rail Car Waste Transfer Areas. Minimize pollutants in discharges from truck and rail car loading and unloading areas. Include measures to clean up minor spills and leaks resulting from the transfer of liquid wastes. Following are two control measure options: (a) containment and diversionary structures to minimize contact with precipitation or runoff, and (b) dry clean-up methods, wet vacuuming, roof coverings, or runoff controls.

c. Recycling Facilities (Source-Separated Materials). The following identifies considerations for facilities that receive only source-separated recyclables, primarily from non-industrial and residential sources.

i. Inbound Recyclable Material Control. Minimize the chance of accepting nonrecyclables (e.g., hazardous materials) that could be a significant source of pollutants by conducting inspections of inbound materials. Following are some control measure options: (a) providing information and education measures to inform suppliers of recyclables about acceptable and non-acceptable materials, (b) training drivers responsible for pickup of recycled material, (c) clearly marking public drop-off containers regarding which materials can be accepted, (d) rejecting nonrecyclable wastes or household hazardous wastes at the source, and (e) establishing procedures for handling and disposal of nonrecyclable material.

ii. Outdoor Storage. Minimize exposure of recyclables to precipitation and runoff. Use good housekeeping measures to prevent accumulation of particulate matter and fluids, particularly in high traffic areas. Following are some control measure options (a) provide totally enclosed drop-off containers for the public; (b) install a sump and pump with each container pit and treat or discharge collected fluids to a sanitary sewer system; (c) provide dikes and curbs for secondary containment (e.g., around bales of recyclable waste paper); (d) divert surface water runoff away from outside material storage areas; (e) provide covers over containment bins, dumpsters, and roll-off boxes; and (f) store the equivalent of one day's volume of recyclable material indoors.

iii. Indoor Storage and Material Processing. Minimize the release of pollutants from indoor storage and processing areas. Following are some control measure options (a) schedule routine good housekeeping measures for all storage and processing areas, (b) prohibit tipping floor wash water from draining to the storm sewer system, and (c) provide employee training on pollution prevention practices.

iv. Vehicle and Equipment Maintenance. Following are some control measure options for areas where vehicle and equipment maintenance occur outdoors (a) prohibit vehicle and equipment wash water from discharging to the storm sewer system, (b) minimize or eliminate outdoor maintenance areas whenever possible, (c) establish spill prevention and clean-up procedures in fueling areas, (d) avoid topping off fuel tanks, (e) divert runoff from fueling areas, (f) store lubricants and hydraulic fluids indoors, and (g) provide employee training on proper handling and storage of hydraulic fluids and lubricants.

4. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Document in the facility's SWMP the locations of any of the following activities or sources that may be exposed to precipitation or surface runoff: scrap and waste material storage, outdoor scrap and waste processing equipment; and containment areas for turnings exposed to cutting fluids.

b. Maintenance Schedules/Procedures for Collection, Handling, and Disposal or Recycling of Residual Fluids at Scrap and Waste Recycling Facilities. If the permittee is subject to Part III.N.3.a.iii, the facility's SWMP must identify any applicable maintenance schedule and the procedures to collect, handle, and dispose of or recycle residual fluids.

5. Additional Inspection Requirements (see also Part I.G).

a. Inspections for Waste Recycling Facilities. The inspections must be performed monthly, and include, at a minimum, all areas where waste is generated, received, stored, treated, or disposed of and that are exposed to either precipitation or stormwater runoff.

6. Sector-Specific Benchmarks.

Table N-1.

Subsector (The permittee may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector N1. Scrap Recycling and Waste Recycling Facilities except Source-Separated Recycling (SIC 5093)	Chemical Oxygen Demand (COD)	120 mg/L
	Total Suspended Solids (TSS)	100 mg/L
	Total Recoverable Aluminum	0.75 mg/L
	Total Recoverable Copper[1]	Hardness Dependent
	Total Recoverable Iron	1.0 mg/L
	Total Recoverable Lead[1]	Hardness Dependent
	Total Recoverable Zinc[1]	Hardness Dependent

[1] The benchmark values of some metals are dependent on water hardness. The ranges occur in 25 mg/L increments. Hardness Dependent Benchmarks follow in the table below:

Water Hardness Range	Copper (mg/L)	Lead (mg/L)	Zinc (mg/L)
0-25 mg/L	0.0038	0.014	0.04
25-50 mg/L	0.0056	0.023	0.05
50-75 mg/L	0.0090	0.045	0.08
75-100 mg/L	0.0123	0.069	0.11
100-125 mg/L	0.0156	0.095	0.13
125-150 mg/L	0.0189	0.122	0.16
150-175 mg/L	0.0221	0.151	0.18
175-200 mg/L	0.0253	0.182	0.20
200-225 mg/L	0.0285	0.213	0.23
225-250 mg/L	0.0316	0.246	0.25
250+ mg/L	0.0332	0.262	0.26

O. Sector O – Steam Electric Generating Facilities

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector O apply to stormwater discharges associated with industrial activity from Steam Electric Power Generating Facilities as identified by the Activity Code specified under Sector O in Table A-1 of Appendix A of the permit.

2. Industrial Activities Covered by Sector O.

This permit authorizes stormwater discharges from the following industrial activities at Sector O facilities:

a. steam electric power generation using coal, natural gas, oil, nuclear energy, etc., to produce a steam source, including coal handling areas;

b. coal pile runoff, including effluent limitations established by 40 CFR Part 423; and

c. dual fuel facilities that could employ a steam boiler.

3. Limitations on Coverage.

a. Prohibition of Non-Stormwater Discharges. Non-stormwater discharges subject to effluent limitations guidelines are not covered by this permit.

b. Prohibition of Stormwater Discharges. Stormwater discharges from the following are not covered by this permit:

i. ancillary facilities (e.g., fleet centers and substations) that are not contiguous to a steam electric power generating facility;

ii. gas turbine facilities (providing the facility is not a dual-fuel facility that includes a steam boiler), and combined-cycle facilities where no supplemental fuel oil is burned (and the facility is not a dual-fuel facility that includes a steam boiler); and

iii. cogeneration (combined heat and power) facilities utilizing a gas turbine.

4. Additional Practice-Based Effluent Limits. The following good housekeeping measures are required in addition to Part I.D.1.b:

a. Fugitive Dust Emissions. Minimize fugitive dust emissions from coal handling areas. To minimize the tracking of coal dust offsite, consider procedures such as installing specially designed tires or washing vehicles in a designated area before they leave the site and controlling the wash water.

b. Delivery Vehicles. Minimize contamination of stormwater runoff from delivery vehicles arriving at the plant site. Consider procedures to inspect delivery vehicles arriving at the plant site and ensure overall integrity of the body or container and procedures to deal with leakage or spillage from vehicles or containers.

c. Fuel Oil Unloading Areas. Minimize contamination of precipitation or surface runoff from fuel oil unloading areas. Consider using containment curbs in unloading areas, having personnel familiar with spill prevention and

response procedures present during deliveries to ensure that any leaks or spills are immediately contained and cleaned up, and using spill and overflow protection devices (e.g., drip pans, drip diapers, or other containment devices placed beneath fuel oil connectors to contain potential spillage during deliveries or from leaks at the connectors).

d. Chemical Loading and Unloading. Minimize contamination of precipitation or surface runoff from chemical loading and unloading areas. Consider using containment curbs at chemical loading and unloading areas to contain spills, having personnel familiar with spill prevention and response procedures present during deliveries to ensure that any leaks or spills are immediately contained and cleaned up, and loading and unloading in covered areas and storing chemicals indoors.

e. Miscellaneous Loading and Unloading Areas. Minimize contamination of precipitation or surface runoff from loading and unloading areas. Consider covering the loading area; grading, berming, or curbing around the loading area to divert run-on; locating the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems; or equivalent procedures.

f. Liquid Storage Tanks. Minimize contamination of surface runoff from above-ground liquid storage tanks. Consider protective guards around tanks, containment curbs, spill and overflow protection, dry cleanup methods, or equivalent measures.

g. Large Bulk Fuel Storage Tanks. Minimize contamination of surface runoff from large bulk fuel storage tanks. Consider containment berms (or their equivalent). The permittee must also comply with applicable State and Federal laws, including Spill Prevention, Control and Countermeasure (SPCC) Plan requirements.

h. Spill Reduction Measures. Minimize the potential for an oil or chemical spill, or reference the appropriate part of the permittee's SPCC plan. Visually inspect as part of the permittee's routine facility inspection the structural integrity of all above-ground tanks, pipelines, pumps, and related equipment that may be exposed to stormwater, and make any necessary repairs immediately.

i. Oil-Bearing Equipment in Switchyards. Minimize contamination of surface runoff from oil-bearing equipment in switchyard areas. Consider using level grades and gravel surfaces to retard flows and limit the spread of spills, or collecting runoff in perimeter ditches.

j. Residue-Hauling Vehicles. Inspect all residue-hauling vehicles for proper covering over the load, adequate gate sealing, and overall integrity of the container body. Repair vehicles without load covering or adequate gate sealing, or with leaking containers or beds.

k. Ash Loading Areas. Reduce or control the tracking of ash and residue from ash loading areas. Clear the ash building floor and immediately adjacent roadways of spillage, debris, and excess water before departure of each loaded vehicle.

l. Areas Adjacent to Disposal Ponds or Landfills. Minimize contamination of surface runoff from areas adjacent to disposal ponds or landfills. Reduce ash residue that may be tracked on to access roads traveled by residue handling vehicles, and reduce ash residue on exit roads leading into and out of residue handling areas.

m. Landfills, Scrap yards, Surface Impoundments, Open Dumps, General Refuse Sites. Minimize the potential for contamination of runoff from these areas.

5. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Document in the facility's SWMP the locations of any of the following activities or sources that may be exposed to precipitation or surface runoff: storage tanks, scrap yards, and general refuse areas; short- and long-term storage of general materials (including but not limited to supplies, construction materials, paint equipment, oils, fuels, used and unused solvents, cleaning materials, paint, water treatment

chemicals, fertilizer, and pesticides); landfills and construction sites; and stock pile areas (e.g., coal or limestone piles).

b. Documentation of Good Housekeeping Measures. The permittee must document in the facility's SWMP the good housekeeping measures implemented to meet the effluent limits in Part III.O.4.

6. Additional Inspection Requirements (see also Part I.G).

a. Site Inspections. As part of facility's inspection, inspect the following areas quarterly: coal handling areas, loading or unloading areas, switchyards, fueling areas, bulk storage areas, ash handling areas, areas adjacent to disposal ponds and landfills, maintenance areas, liquid storage tanks, and long term and short term material storage areas.

7. Sector-Specific Benchmarks

Table O-1 identifies benchmarks that apply to the specific subsectors of Sector O. These benchmarks apply to both the facility's primary industrial activity and any co-located industrial activities, which describe the facility's site activities.

Table O-1.

Subsector (The permittee may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
Subsector O1. Steam Electric Generating Facilities (Industrial Activity Code "SE")	Total Iron	1.0 mg/L

8. Effluent Limitations Based on Effluent Limitations Guidelines (see also Part I.A.1.a)

Table O-2 identifies effluent limits that apply to the industrial activities described below. Compliance with these effluent limits is to be determined based on discharges from these industrial activities independent of commingling with any other waste streams that may be covered under this permit.

Table O-2[1]

Industrial Activity	Parameter	Effluent Limit
Discharges from coal storage piles at Steam Electric Generating Facilities	TSS	50 mg/l[2]
	pH	6.0 min - 9.0 max

[1] Monitor annually.

[2] If the facility is designed, constructed, and operated to treat the volume of coal pile runoff that is associated with a 10-year, 24-hour rainfall event, any untreated overflow of coal pile runoff from the treatment unit is not subject to the 50 mg/L limitation for total suspended solids.

P. Sector P – Land Transportation and Warehousing

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector P apply to stormwater discharges associated with industrial activity from Land Transportation and Warehousing facilities as identified by the SIC Codes specified under Sector P in Table A-1 of Appendix A of the permit.

2. Limitation on Coverage

a. Prohibited Discharges (see also Part I.A.2) This permit does not authorize the discharge of vehicle/equipment/surface wash water, including tank-cleaning operations. Such discharges must be authorized under a separate CDPS permit, discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements, or recycled on-site.

3. Additional Practice-Based Effluent Limits. (see also Part I.D.1)

a. Good Housekeeping Measures. In addition to the Good Housekeeping requirements in Part I.D.1.b, the permittee must do the following. Recommended control measures are discussed as indicated:

i. Vehicle and Equipment Storage Areas. Minimize the potential for stormwater exposure to leaky or leak-prone vehicles/equipment awaiting maintenance. Consider the following (or other equivalent measures): use of drip pans under vehicles/equipment, indoor storage of vehicles and equipment, installation of berms or dikes, use of absorbents, roofing or covering storage areas, and cleaning pavement surfaces to remove oil and grease.

ii. Fueling Areas. Minimize contamination of stormwater runoff from fueling areas. Consider the following (or other equivalent measures): Covering the fueling area; using spill/overflow protection and cleanup equipment; minimizing stormwater run-on/runoff to the fueling area; using dry cleanup methods; and treating and/or recycling collected stormwater runoff.

iii. Material Storage Areas. Maintain all material storage vessels (e.g., for used oil/oil filters, spent solvents, paint wastes, hydraulic fluids) to prevent contamination of stormwater and plainly label them (e.g., "Used Oil," "Spent Solvents," etc.). Consider the following (or other equivalent measures): storing the materials indoors; installing berms/dikes around the areas; minimizing runoff of stormwater to the areas; using dry cleanup methods; and treating and/or recycling collected stormwater runoff.

iv. Vehicle and Equipment Cleaning Areas. Minimize contamination of stormwater runoff from all areas used for vehicle/equipment cleaning. Consider the following (or other equivalent measures): performing all cleaning operations indoors; covering the cleaning operation, ensuring that all wash water drains to a proper collection system (i.e., not the stormwater drainage system); treating and/or recycling collected wash water, or other equivalent measures.

v. Vehicle and Equipment Maintenance Areas. Minimize contamination of stormwater runoff from all areas used for vehicle/equipment maintenance. Consider the following (or other equivalent measures): performing maintenance activities indoors; using drip pans; keeping an organized inventory of materials used in the shop; draining all parts of fluid prior to disposal; prohibiting wet clean up practices if these practices would result in the discharge of pollutants to stormwater drainage systems; using dry cleanup

methods; treating and/or recycling collected stormwater runoff, minimizing run on/runoff of stormwater to maintenance areas.

vi. Locomotive Sanding (Loading Sand for Traction) Areas. Consider the following (or other equivalent measures): covering sanding areas; minimizing stormwater run on/runoff; or appropriate sediment removal practices to minimize the offsite transport of sanding material by stormwater.

b. Employee Training. Train personnel at least once a year and address the following activities, as applicable: used oil and spent solvent management; fueling procedures; general good housekeeping practices; proper painting procedures; and used battery management.

4. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Identify in the SWMP the following areas of the facility and indicate whether activities occurring there may be exposed to precipitation/surface runoff: Fueling stations; vehicle/equipment maintenance or cleaning areas; storage areas for vehicle/equipment with actual or potential fluid leaks; loading/unloading areas; areas where treatment, storage or disposal of wastes occur; liquid storage tanks; processing areas; and storage areas.

b. Potential Pollutant Sources. Assess the potential for the following activities and facility areas to contribute pollutants to stormwater discharges: Onsite waste storage or disposal; dirt/gravel parking areas for vehicles awaiting maintenance; illicit plumbing connections between shop floor drains and the stormwater conveyance system(s); and fueling areas. Describe these activities in the SWMP.

c. Description of Good Housekeeping Measures. The permittee must document in the facility's SWMP the good housekeeping measures the permittee implements consistent with Part III.P.3.

d. Vehicle and Equipment Wash water Requirements. If applicable, attach to or reference in the facility's SWMP, a copy of the CDPS permit issued for vehicle/equipment wash water or, if a CDPS permit has not been issued, a copy of the pending application. If an industrial user permit is issued under a local pretreatment program, attach a copy to the facility's SWMP. In any case, implement all non-stormwater discharge permit conditions or pretreatment conditions in the facility's SWMP. If wash water is handled in another manner (e.g., hauled offsite), describe the disposal method and attach all pertinent documentation/information (e.g., frequency, volume, destination, etc.) in the plan.

5. Additional Inspection Requirements (see also Part I.G).

Inspect all the following areas/activities: storage areas for vehicles/equipment awaiting maintenance, fueling areas, indoor and outdoor vehicle/equipment maintenance areas, material storage areas, vehicle/equipment cleaning areas and loading/unloading areas.

Q. Sector Q – Water Transportation

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector Q apply to stormwater discharges associated with industrial activity from Water Transportation facilities as identified by the SIC Codes specified under Sector Q in Table A-1 of Appendix A of the permit.

2. Limitations on Coverage.

a. Prohibition of Non-Stormwater Discharges. (See also Part I.A.2) Not covered by this permit: bilge and ballast water, sanitary wastes, pressure wash water, and cooling water originating from vessels.

3. Additional Practice-Based Effluent Limits. (see also Part I.D.1)

a. Good Housekeeping Measures. The permittee must implement the following good housekeeping measures in addition to the requirements of Part I.D.1.b:

i. Pressure Washing Area. If pressure washing is used to remove marine growth from vessels, the discharge water must be permitted by a separate CDPS permit. Collect or contain the discharges from the pressures washing area so that they are not co-mingled with stormwater discharges authorized by this permit.

ii. Blasting and Painting Area. Minimize the potential for spent abrasives, paint chips, and overspray to discharge into receiving waters or the storm sewer systems. Consider containing all blasting and painting activities or use other measures to minimize the discharge of contaminants (e.g., hanging plastic barriers or tarpaulins during blasting or painting operations to contain debris). When necessary, regularly clean stormwater conveyances of deposits of abrasive blasting debris and paint chips.

iii. Material Storage Areas. Store and plainly label all containerized materials (e.g., fuels, paints, solvents, waste oil, antifreeze, batteries) in a protected, secure location away from drains. Minimize the contamination of precipitation or surface runoff from the storage areas. Specify which materials are stored indoors, and consider containment or enclosure for those stored outdoors. If abrasive blasting is performed, discuss the storage and disposal of spent abrasive materials generated at the facility. Consider implementing an inventory control plan to limit the presence of potentially hazardous materials onsite.

iv. Engine Maintenance and Repair Areas. Minimize the contamination of precipitation or surface runoff from all areas used for engine maintenance and repair. Consider the following (or their equivalents): performing all maintenance activities indoors, maintaining an organized inventory of materials used in the shop, draining all parts of fluid prior to disposal, prohibiting the practice of hosing down the shop floor, using dry cleanup methods, and treating and/or recycling stormwater runoff collected from the maintenance area.

v. Material Handling Area. Minimize the contamination of precipitation or surface runoff from material handling operations and areas (e.g., fueling, paint and solvent mixing, disposal of process wastewater streams from vessels). Consider the following (or their equivalents): covering fueling areas, using spill and overflow protection, mixing paints and solvents in a designated area (preferably indoors or under a shed), and minimizing runoff of stormwater to material handling areas.

vi. Drydock Activities. Routinely maintain and clean the dry dock to minimize pollutants in stormwater runoff. Address the cleaning of accessible areas of the dry dock prior to flooding, and final cleanup following removal of the vessel and raising the dock. Include procedures for cleaning up oil, grease, and fuel spills occurring on the dry dock. Consider the following (or their equivalents): sweeping rather than hosing off debris and spent blasting material from accessible areas of the dry dock prior to flooding and making absorbent materials and oil containment booms readily available to clean up or contain any spills.

b. Employee Training. As part of the permittee' employee training program, address, at a minimum, the following activities (as applicable): used oil management, spent solvent management, disposal of spent abrasives, disposal of vessel wastewaters, spill prevention and control, fueling procedures, general good housekeeping practices, painting and blasting procedures, and used battery management.

c. Preventive Maintenance. As part of the permittee's preventive maintenance program, perform timely inspection and maintenance of stormwater management devices (e.g., cleaning oil and water separators and sediment traps to ensure that spent abrasives, paint chips, and solids will be intercepted and retained prior to entering the storm drainage system), as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.

4. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Document in the facility's SWMP where any of the following may be exposed to precipitation or surface runoff: fueling; engine maintenance and repair; vessel maintenance and repair; pressure washing; painting; sanding; blasting; welding; metal fabrication; loading and unloading areas; locations used for the treatment, storage, or disposal of wastes; liquid storage tanks; liquid storage areas (e.g., paint, solvents, resins); and material storage areas (e.g., blasting media, aluminum, steel, scrap iron).

b. Summary of Potential Pollutant Sources. Document in the SWMP the following additional sources and activities that have potential pollutants associated with them: outdoor manufacturing or processing activities (e.g., welding, metal fabricating) and significant dust or particulate generating processes (e.g., abrasive blasting, sanding, and painting.)

5. Additional Inspection Requirements (see also Part I.G).

Include the following in all quarterly routine facility inspections: pressure washing area; blasting, sanding, and painting areas; material storage areas; engine maintenance and repair areas; material handling areas; drydock area; and general yard area.

6. Sector-Specific Benchmarks.

Table Q-1.		
Subsector (The permittee may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector Q1. Water Transportation Facilities (SIC 4412-4499)	Total Aluminum	0.75 mg/L
	Total Iron	1.0 mg/L
	Total Lead[1]	Hardness Dependent
	Total Zinc[1]	Hardness Dependent

[1] The benchmark values of some metals are dependent on water hardness. The ranges occur in 25 mg/L increments. Hardness Dependent Benchmarks follow in the table below:

Water Hardness Range	**Lead** (mg/L)	**Zinc** (mg/L)
0-25 mg/L	0.014	0.04
25-50 mg/L	0.023	0.05
50-75 mg/L	0.045	0.08
75-100 mg/L	0.069	0.11
100-125 mg/L	0.095	0.13
125-150 mg/L	0.122	0.16
150-175 mg/L	0.151	0.18
175-200 mg/L	0.182	0.20
200-225 mg/L	0.213	0.23
225-250 mg/L	0.246	0.25
250+ mg/L	0.262	0.26

R. Sector R – Ship and Boat Building and Repair Yards

The permittee must comply with Part III sector-specific requirements associated with the facility primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector R apply to stormwater discharges associated with industrial activity from Ship and Boat Building and Repair Yards as identified by the SIC Codes specified under Sector R in Table A-1 of Appendix A of the permit.

2. Limitations on Coverage.

a. Prohibition of Non-Stormwater Discharges. (See also Part I.A.2) Discharges containing bilge and ballast water, sanitary wastes, pressure wash water, and cooling water originating from vessels are not covered by this permit.

3. Additional Practice-Based Effluent Limits. (see also Part I.D.1)

a. Good Housekeeping Measures

i. Pressure Washing Area. If pressure washing is used to remove marine growth from vessels, the discharged water must be permitted as a process wastewater by a separate CDPS permit.

ii. Blasting and Painting Area. Minimize the potential for spent abrasives, paint chips, and overspray to discharging into the receiving water or the storm sewer systems. Consider containing all blasting and painting activities, or use other measures to prevent the discharge of the contaminants (e.g., hanging plastic barriers or tarpaulins during blasting or painting operations to contain debris). When necessary, regularly clean stormwater conveyances of deposits of abrasive blasting debris and paint chips.

iii. Material Storage Areas. Store and plainly label all containerized materials (e.g., fuels, paints, solvents, waste oil, antifreeze, batteries) in a protected, secure location away from drains. Minimize the contamination of precipitation or surface runoff from the storage areas. If abrasive blasting is performed, discuss the storage and disposal of spent abrasive materials generated at the facility. Consider implementing an inventory control plan to limit the presence of potentially hazardous materials onsite.

iv. Engine Maintenance and Repair Areas. Minimize the contamination of precipitation or surface runoff from all areas used for engine maintenance and repair. Consider the following (or their equivalents): performing all maintenance activities indoors, maintaining an organized inventory of materials used in the shop, draining all parts of fluid prior to disposal, prohibiting the practice of hosing down the shop floor, using dry cleanup methods, and treating and/or recycling stormwater runoff collected from the maintenance area.

v. Material Handling Area. Minimize the contamination of precipitation or surface runoff from material handling operations and areas (e.g., fueling, paint and solvent mixing, disposal of process wastewater streams from vessels). Consider the following (or their equivalents): covering fueling areas, using spill and overflow protection, mixing paints and solvents in a designated area (preferably indoors or under a shed), and minimizing stormwater run-on to material handling areas.

vi. Drydock Activities. Routinely maintain and clean the dry dock to minimize pollutants in stormwater runoff. Clean accessible areas of the dry dock prior to flooding and final cleanup following removal of the vessel and raising the dock. Include procedures for cleaning up oil, grease, or fuel spills occurring on

the dry dock. Consider the following (or their equivalents): sweeping rather than hosing off debris and spent blasting material from accessible areas of the dry dock prior to flooding, and having absorbent materials and oil containment booms readily available to clean up and contain any spills.

b. Employee Training. As part of the permittee's employee training program, address, at a minimum, the following activities (as applicable): used oil management, spent solvent management, disposal of spent abrasives, disposal of vessel wastewaters, spill prevention and control, fueling procedures, general good housekeeping practices, painting and blasting procedures, and used battery management.

c. Preventive Maintenance. As part of the permittee's preventive maintenance program, perform timely inspection and maintenance of stormwater management devices (e.g., cleaning oil and water separators and sediment traps to ensure that spent abrasives, paint chips, and solids will be intercepted and retained prior to entering the storm drainage system), as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters.

4. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Document in the facility's SWMP where any of the following may be exposed to precipitation or surface runoff: fueling; engine maintenance or repair; vessel maintenance or repair; pressure washing; painting; sanding; blasting; welding; metal fabrication; loading and unloading areas; treatment, storage, and waste disposal areas; liquid storage tanks; liquid storage areas (e.g., paint, solvents, resins); and material storage areas (e.g., blasting media, aluminum, steel, scrap iron).

b. Potential Pollutant Sources. Document in the facility's SWMP the following additional sources and activities that have potential pollutants associated with them (if applicable): outdoor manufacturing or processing activities (e.g., welding, metal fabricating) and significant dust or particulate generating processes (e.g., abrasive blasting, sanding, and painting).

c. Documentation of Good Housekeeping Measures. Document in the facility's SWMP any good housekeeping measures implemented to meet the effluent limits in Part III.R.3.

i. Blasting and Painting Areas. Document in the SWMP any standard operating practices relating to blasting and painting (e.g., prohibiting uncontained blasting and painting over open water or prohibiting blasting and painting during windy conditions, which can render containment ineffective).

ii. Storage Areas. Specify in the facility's SWMP which materials are stored indoors, and consider containment or enclosure for those stored outdoors.

5. Additional Inspection Requirements (see also Part I.G).

Include the following in all quarterly routine facility inspections: pressure washing area; blasting, sanding, and painting areas; material storage areas; engine maintenance and repair areas; material handling areas; dry dock area; and general yard area.

S. Sector S – Air Transportation

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector S apply to stormwater discharges associated with industrial activity from Air Transportation facilities identified by the SIC Codes specified under Sector S in Table A-1 of Appendix A of the permit.

2. Limitation on Coverage

a. Limitations on Coverage. This permit authorizes stormwater discharges from only those portions of the air transportation facility that are involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling and lubrication), equipment cleaning operations or deicing operations.

Note: "deicing" will generally be used to imply both deicing (removing frost, snow or ice) and anti-icing (preventing accumulation of frost, snow or ice) activities, unless specific mention is made regarding anti-icing and/or deicing activities.

b. Prohibition of Non-Stormwater Discharges. (See also Part I.A.2 and Part III.S.3) This permit does not authorize the discharge of aircraft; ground vehicle, runway and equipment wash waters nor the dry weather discharge of deicing chemicals. Such discharges must be covered by separate CDPS permit(s). Note that a discharge resulting from snowmelt is not a dry weather discharge.

3. Additional Practice-Based Effluent Limits. (see also Part I.D.1)

a. Good Housekeeping Measures.

i. Aircraft, Ground Vehicle and Equipment Maintenance Areas. Minimize the contamination of stormwater runoff from all areas used for aircraft, ground vehicle and equipment maintenance (including the maintenance conducted on the terminal apron and in dedicated hangers). Consider the following practices (or their equivalents): performing maintenance activities indoors; maintaining an organized inventory of material used in the maintenance areas; draining all parts of fluids prior to disposal; prohibiting the practice of hosing down the apron or hanger floor; using dry cleanup methods; and collecting the stormwater runoff from the maintenance area and providing treatment or recycling.

ii. Aircraft, Ground Vehicle and Equipment Cleaning Areas. Clearly demarcate these areas on the ground using signage or other appropriate means. Minimize the contamination of stormwater runoff from cleaning areas.

iii. Aircraft, Ground Vehicle and Equipment Storage Areas. Store all aircraft, ground vehicles and equipment awaiting maintenance in designated areas only and minimize the contamination of stormwater runoff from these storage areas. Consider the following control measures, including any BMPs (or their equivalents): storing aircraft and ground vehicles indoors; using drip pans for the collection of fluid leaks; and perimeter drains, dikes or berms surrounding the storage areas.

iv. Material Storage Areas. Maintain the vessels of stored materials (e.g., used oils, hydraulic fluids, spent solvents, and waste aircraft fuel) in good condition, to prevent or minimize contamination of stormwater. Also plainly label the vessels (e.g., "used oil," "Contaminated Jet A," etc.). Minimize contamination of precipitation/runoff from these areas. Consider the following control measures (or their equivalents):

storing materials indoors; storing waste materials in a centralized location; and installing berms/dikes around storage areas.

v. Airport Fuel System and Fueling Areas. Minimize the discharge of fuel to the storm sewer/surface waters resulting from fuel servicing activities or other operations conducted in support of the airport fuel system. Consider the following control measures (or their equivalents): implementing spill and overflow practices (e.g., placing absorptive materials beneath aircraft during fueling operations); using only dry cleanup methods; and collecting stormwater runoff.

vi. Source Reduction. Minimize, and where feasible eliminate, the use of urea and glycol-based deicing chemicals, in order to reduce the aggregate amount of deicing chemicals used and/or lessen the environmental impact. Chemical options to replace ethylene glycol, propylene glycol and urea include: potassium acetate; magnesium acetate; calcium acetate; and anhydrous sodium acetate.

a) Runway Deicing Operation: Minimize contamination of stormwater runoff from runways as a result of deicing operations. Evaluate whether over-application of deicing chemicals occurs by analyzing application rates, and adjust as necessary, consistent with considerations of flight safety. Also, consider these control measure options (or their equivalents): metered application of chemicals; pre-wetting dry chemical constituents prior to application; installing a runway ice detection system; implementing anti-icing operations as a preventive measure against ice buildup.

b) Aircraft Deicing Operations. Minimize contamination of stormwater runoff from aircraft deicing operations. Determine whether excessive application of deicing chemicals occurs and adjust as necessary, consistent with considerations of flight safety. This evaluation should be carried out by the personnel most familiar with the particular aircraft and flight operations in question (versus an outside entity such as the airport authority). Consider using alternative deicing/anti-icing agents as well as containment measures for all applied chemicals. Also consider these control measure options (or their equivalents) for reducing deicing fluid use: forced-air deicing systems, computer-controlled fixed-gantry systems, infrared technology, hot water, varying glycol content to air temperature, enclosed-basket deicing trucks, mechanical methods, solar radiation, hangar storage, aircraft covers, and thermal blankets for MD-80s and DC-9s. Also consider using ice-detection systems and airport traffic flow strategies and departure slot allocation systems.

vii. Management of Runoff. Where deicing operations occur, implement a program to control or manage contaminated runoff to minimize the amount of pollutants being discharged from the site. Consider these control measure options (or their equivalents): a dedicated deicing facility with a runoff collection/ recovery system; using vacuum/collection trucks; storing contaminated stormwater/deicing fluids in tanks and releasing controlled amounts to a publicly owned treatment works; collecting contaminated runoff in a wet pond for biochemical decomposition (be aware of attracting wildlife that may prove hazardous to flight operations); and directing runoff into vegetative swales or other infiltration measures. Also consider recovering deicing materials when these materials are applied during non-precipitation events (e.g., covering storm sewer inlets, using booms, installing absorptive interceptors in the drains, etc.) to prevent these materials from later becoming a source of stormwater contamination. Used deicing fluid should be recycled whenever possible.

b. Deicing Season. The permittee must determine the seasonal timeframe (e.g., December- February, October - March, etc.) during which deicing activities typically occur at the facility. Implementation of control measures, including any BMPs, facility inspections and monitoring must be conducted with particular emphasis throughout the defined deicing season. If the permittee meets the deicing chemical usage thresholds of 100,000 gallons glycol and/or 100 tons of urea, the deicing season the permittee identified is the timeframe during which the permittee must obtain the four required benchmark monitoring event results for deicing-related parameters, i.e., BOD, COD, ammonia and pH. See also Part III.S.6.

4. Additional SWMP Requirements. (see also Part I.F)

An airport authority and tenants of the airport are encouraged to work in partnership in the development of a SWMP. If an airport tenant obtains authorization under this permit and develops a SWMP for discharges from his own areas of the airport, prior to authorization, that SWMP must be coordinated and integrated with the SWMP for the entire airport. Tenants of the airport facility include air passenger or cargo companies, fixed based operators and other parties who have contracts with the airport authority to conduct business operations on airport property and whose operations result in stormwater discharges associated with industrial activity.

a. Drainage Area Site Map. Document in the SWMP the following areas of the facility and indicate whether activities occurring there may be exposed to precipitation/surface runoff: aircraft and runway deicing operations; fueling stations; aircraft, ground vehicle and equipment maintenance/cleaning areas; storage areas for aircraft, ground vehicles and equipment awaiting maintenance.

b. Potential Pollutant Sources. In the permittee's inventory of exposed materials, describe in the facility's SWMP the potential for the following activities and facility areas to contribute pollutants to stormwater discharges: aircraft, runway, ground vehicle and equipment maintenance and cleaning; aircraft and runway deicing operations (including apron and centralized aircraft deicing stations, runways, taxiways and ramps). If the permittee uses deicing chemicals, the permittee must maintain a record of the types (including the Material Safety Data Sheets [MSDS]) used and the monthly quantities, either as measured or, in the absence of metering, as estimated to the best of the permittee's knowledge. This includes all deicing chemicals, not just glycols and urea (e.g., potassium acetate), because large quantities of these other chemicals can still have an adverse impact on receiving waters. Tenants or other fixed-based operations that conduct deicing operations must provide the above information to the airport authority for inclusion with any comprehensive airport SWMPs.

c. Vehicle and Equipment Wash water Requirements. Attach to or reference in the facility's SWMP, a copy of the CDPS permit issued for vehicle/equipment wash water or, if a CDPS permit has not been issued, a copy of the pending application. If an industrial user permit is issued under a local pretreatment program, include a copy in the facility's SWMP. In any case, if the permittee is subject to another permit, describe the facility's control measures for implementing all non-stormwater discharge permit conditions or pretreatment requirements in the facility's SWMP. If wash water is handled in another manner (e.g., hauled offsite, retained onsite), describe the disposal method and attach all pertinent documentation/information (e.g., frequency, volume, destination, etc.) in the facility's SWMP.

d. Documentation of Control Measures Used for Management of Runoff: Document in the facility's SWMP the control measures used for collecting or containing contaminated melt water from collection areas used for disposal of contaminated snow.

5. Additional Inspection Requirements (see also Part I.G).

a. Inspection Frequency. At a minimum, conduct visual inspections at least monthly during the deicing season (e.g., October through April for most mid-latitude airports). If the permittee's facility needs to deice before or after this period, expand the monthly inspections to include all months during which deicing chemicals may be used. The Division may specifically require the permittee to increase inspection frequencies.

b. Inspection Scope. Using only qualified personnel, conduct the visual inspections during periods of actual deicing operations, if possible. If not practicable during active deicing because of weather, conduct the inspection during the season when deicing operations occur and the materials and equipment for deicing are in place.

6. Sector-Specific Benchmarks.

Monitor per the requirements in Table S-1.

Table S-1.

Subsector (The permittee may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration
For airports where a single permittee, or a combination of permitted facilities use more than 100,000 gallons of glycol-based deicing chemicals and/or 100 tons or more of urea on an average annual basis, monitor the first four parameters in ONLY those outfalls that collect runoff from areas where deicing activities occur (SIC 4512-4581).	Biochemical Oxygen Demand (BOD_5)[1]	30 mg/L
	Chemical Oxygen Demand (COD)[1]	120 mg/L
	Ammonia[1]	2.14 mg/L
	pH[1]	6.0 - 9.0 s.u.

[1] These are deicing-related parameters. Collect the four benchmark samples, and any required follow-up benchmark samples, during the timeframe defined in Part S.3.2 when deicing activities are occurring.

T. Sector T – Treatment Works

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector T apply to stormwater discharges associated with industrial activity from Treatment Works as identified by the Activity Code specified under Sector T in Table A-1 of Appendix A of the permit.

2. Industrial Activities Covered by Sector T.

The requirements listed under this part apply to all existing point source stormwater discharges associated with the following activities:

a. Treatment works treating domestic sewage, or any other sewage sludge or wastewater treatment device or system used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge; that are located within the confines of a facility with a design flow of 1.0 million gallons per day (MGD) or more; or are required to have an approved pretreatment program under 40 CFR Part 403.

b. The following are not required to have permit coverage: farmlands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located within the facility, or areas that are in compliance with Section 405 of the CWA.

3. Limitations on Coverage.

a. Prohibition of Non-Stormwater Discharges. (See also Part I.A.2) Sanitary and industrial wastewater, equipment, and vehicle wash water are not authorized by this permit.

4. Additional Practice-Based Effluent Limits. (see also Part I.D.1)

a. Control Measures. In addition to the other control measures, consider the following: routing stormwater to the treatment works; or covering exposed materials (i.e., from the following areas: grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; and septage or hauled waste receiving station).

b. Employee Training. At a minimum, training must address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and controls; fueling procedures; general good housekeeping practices; and proper procedures for using fertilizer, herbicides, and pesticides.

5. Additional SWMP Requirements. (see also Part I.F)

a. Site Map. Document in the facility's SWMP where any of the following may be exposed to precipitation or surface runoff: grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; septage or hauled waste receiving station; and storage areas for process chemicals, petroleum products, solvents, fertilizers, herbicides, and pesticides.

b. Potential Pollutant Sources. Document in the facility's SWMP the following additional sources and activities that have potential pollutants associated with them, as applicable: grit, screenings, and other solids handling, storage,

or disposal areas; sludge drying beds; dried sludge piles; compost piles; septage or hauled waste receiving station; and access roads and rail lines.

c. Wastewater and Washwater Requirements. Keep a copy of all the permittee' current CDPS permits issued for wastewater and industrial, vehicle and equipment wash water discharges or, if an CDPS permit has not yet been issued, a copy of the pending application(s) with the permittee's SWMP. If the wash water is handled in another manner, the disposal method must be described and all pertinent documentation must be retained onsite.

6. Additional Inspection Requirements (see also Part I.G).

Include the following areas in all inspections: access roads and rail lines; grit, screenings, and other solids handling, storage, or disposal areas; sludge drying beds; dried sludge piles; compost piles; and septage or hauled waste receiving station.

U. Sector U – Food and Kindred Products

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector U apply to stormwater discharges associated with industrial activity from Food and Kindred Products facilities as identified by the SIC Codes specified in Table A-1 of Appendix A of the permit.

2. Limitations on Coverage.

a. Prohibition of Non-Stormwater Discharges. (See also Part I.A.2) The following discharges are not authorized by this permit: discharges containing boiler blowdown, cooling tower overflow and blowdown, ammonia refrigeration purging, and vehicle washing and clean-out operations.

3. Additional Practice-based Effluent Limitations. (see also Part I.D.1)

a. Employee Training. Address pest control in the permittee's employee training program.

4. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Document in the facility's SWMP the locations of the following activities if they are exposed to precipitation or runoff: vents and stacks from cooking, drying, and similar operations; dry product vacuum transfer lines; animal holding pens; spoiled product; and broken product container storage areas.

b. Potential Pollutant Sources. Document in the facility's SWMP, in addition to food and kindred products processing-related industrial activities, application and storage of pest control chemicals (e.g., rodenticides, insecticides, fungicides) used on plant grounds.

5. Additional Inspection Requirements (see also Part I.G).

Inspect on a quarterly basis, at a minimum, the following areas where the potential for exposure to stormwater exists: loading and unloading areas for all significant materials; storage areas, including associated containment areas; waste management units; vents and stacks emanating from industrial activities; spoiled product and broken product container holding areas; animal holding pens; staging areas; and air pollution control equipment.

6. Sector-Specific Benchmarks.

Table U-1.

Subsector (The permittee may be subject to requirements for more than one Sector / Subsector)	Parameter	Benchmark Monitoring Concentration
Subsector U1. Grain Mill Products (SIC 2041-2048)	Total Suspended Solids (TSS)	100 mg/L
Subsector U2. Fats and Oils Products (SIC 2074-2079)	Biochemical Oxygen Demand (BOD_5)	30 mg/L
	Chemical Oxygen Demand (COD)	120 mg/L
	Nitrate plus Nitrite Nitrogen	0.68 mg/L
	Total Suspended Solids (TSS)	100 mg/L

V. Sector V – Textile Mills, Apparel, and Other Fabric Products

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector V apply to stormwater discharges associated with industrial activity from Textile Mills, Apparel, and Other Fabric Product manufacturing as identified by the SIC Codes specified under Sector V in Table A-1 of Appendix A of the permit.

2. Limitations on Coverage.

a. Prohibition of Non-Stormwater Discharges. (See also Part I.A.2) The following are not authorized by this permit: discharges of wastewater (e.g., wastewater resulting from wet processing or from any processes relating to the production process), reused or recycled water, and waters used in cooling towers. If the permittee has these types of discharges from the permittee's facility, the permittee must cover them under a separate CDPS permit.

3. Additional Practice-Based Limitations. (See also Part I.D.1)

a. Good Housekeeping Measures.

i. Material Storage Areas. Plainly label and store all containerized materials (e.g., fuels, petroleum products, solvents, and dyes) in a protected area, away from drains. Minimize contamination of the stormwater runoff from such storage areas. Also, consider an inventory control plan to prevent excessive purchasing of potentially hazardous substances. For storing empty chemical drums or containers, ensure that the drums and containers are clean (consider triple-rinsing) and that there is no contact of residuals with precipitation or runoff. Collect and dispose of wash water from these cleanings properly.

ii. Material Handling Areas. Minimize contamination of stormwater runoff from material handling operations and areas. Consider the following (or their equivalents): use of spill and overflow protection; covering fueling areas; and covering or enclosing areas where the transfer of material may occur. When applicable, address the replacement or repair of leaking connections, valves, transfer lines, and pipes that may carry chemicals, dyes, or wastewater.

iii. Fueling Areas. Minimize contamination of stormwater runoff from fueling areas. Consider the following (or their equivalents): covering the fueling area, using spill and overflow protection, minimizing run-on of stormwater to the fueling areas, using dry cleanup methods, and treating and/or recycling stormwater runoff collected from the fueling area.

iv. Above-Ground Storage Tank Area. Minimize contamination of the stormwater runoff from above-ground storage tank areas, including the associated piping and valves. Consider the following (or their equivalents): regular cleanup of these areas; including measures for tanks, piping and valves explicitly in the permittee's SPCC program; minimizing runoff of stormwater from adjacent areas; restricting access to the area; inserting filters in adjacent catch basins; providing absorbent booms in unbermed fueling areas; using dry cleanup methods; and permanently sealing drains within critical areas that may discharge to a storm drain.

b. Employee Training. As part of the permittee's employee training program, address, at a minimum, the following activities (as applicable): use of reused and recycled waters, solvents management, proper disposal of dyes,

proper disposal of petroleum products and spent lubricants, spill prevention and control, fueling procedures, and general good housekeeping practices.

4. Additional SWMP Requirements. (see also Part I.F)

a. Potential Pollutant Sources. Document in the facility's SWMP the following additional sources and activities that have potential pollutants associated with them: industry-specific significant materials and industrial activities (e.g., backwinding, beaming, bleaching, backing bonding, carbonizing, carding, cut and sew operations, desizing, drawing, dyeing locking, fulling, knitting, mercerizing, opening, packing, plying, scouring, slashing, spinning, synthetic-felt processing, textile waste processing, tufting, turning, weaving, web forming, winging, yarn spinning, and yarn texturing).

b. Description of Good Housekeeping Measures for Material Storage Areas. Document in the SWMP the permittee's containment area or enclosure for materials stored outdoors in connection with Part III.V.3.a.i above.

5. Additional Inspection Requirements (see also Part I.G).

Inspect, at least monthly, the following activities and areas (at a minimum): transfer and transmission lines, spill prevention, good housekeeping practices, management of process waste products, and all structural and nonstructural management practices.

W. Sector W – Furniture and Fixtures

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector W apply to stormwater discharges associated with industrial activity from Furniture and Fixtures facilities as identified by the SIC Codes specified under Sector W in Table A-1 of Appendix A of the permit.

2. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Document in the permitee's SWMP where any of the following may be exposed to precipitation or surface runoff: material storage (including tanks or other vessels used for liquid or waste storage) areas; outdoor material processing areas; areas where wastes are treated, stored, or disposed of; access roads; and rail spurs.

X. Sector X – Printing and Publishing

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector X apply to stormwater discharges associated with industrial activity from Printing and Publishing facilities as identified by the SIC Codes specified under Sector X in Table A-1 of Appendix A of the permit.

2. Additional Practice-Based Effluent Limits (see also Part I.D.1).

a. Good Housekeeping Measures.

i. Material Storage Areas. Plainly label and store all containerized materials (e.g., skids, pallets, solvents, bulk inks, hazardous waste, empty drums, portable and mobile containers of plant debris, wood crates, steel racks, and fuel oil) in a protected area, away from drains. Minimize contamination of the stormwater runoff from such storage areas. Also, consider an inventory control plan to prevent excessive purchasing of potentially hazardous substances.

ii. Material Handling Area. Minimize contamination of stormwater runoff from material handling operations and areas (e.g., blanket wash, mixing solvents, loading and unloading materials). Consider the following (or their equivalents): using spill and overflow protection, covering fueling areas, and covering or enclosing areas where the transfer of materials may occur. When applicable, address the replacement or repair of leaking connections, valves, transfer lines, and pipes that may carry chemicals or wastewater.

iii. Fueling Areas. Minimize contamination of stormwater runoff from fueling areas. Consider the following (or their equivalents): covering the fueling area, using spill and overflow protection, minimizing runoff of stormwater to the fueling areas, using dry cleanup methods, and treating and/or recycling stormwater runoff collected from the fueling area.

iv. Above Ground Storage Tank Area. Minimize contamination of the stormwater runoff from above-ground storage tank areas, including the associated piping and valves. Consider the following (or their equivalents): regularly cleaning these areas, explicitly addressing tanks, piping and valves in the SPCC program, minimizing stormwater runoff from adjacent areas, restricting access to the area, inserting filters in adjacent catch basins, providing absorbent booms in unbermed fueling areas, using dry cleanup methods, and permanently sealing drains within critical areas that may discharge to a storm drain.

b. Employee Training. As part of the permittee's employee training program, address, at a minimum, the following activities (as applicable): spent solvent management, spill prevention and control, used oil management, fueling procedures, and general good housekeeping practices.

3. Additional SWMP Requirements. (see also Part I.F)

a. Description of Good Housekeeping Measures for Material Storage Areas. In connection with Part III.X.2.a.i, describe in the SWMP the containment area or enclosure for materials stored outdoors.

Y. Sector Y – Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee' facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector Y apply to stormwater discharges associated with industrial activity from Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries facilities as identified by the SIC Codes specified under Sector Y in Table A-1 of Appendix A of the permit.

2. Additional Practice-Based Effluent Limits (see also Part I.D.1)

a. Controls for Rubber Manufacturers. Minimize the discharge of zinc in the permittee's stormwater discharges. Parts III.Y.2.a.i to Y.2.a.v give possible sources of zinc to be reviewed and list some specific control measures to be considered for implementation (or their equivalents). Following are some general control measure options to consider: using chemicals purchased in pre-weighed, sealed polyethylene bags; storing in-use materials in sealable containers, ensuring an airspace between the container and the cover to minimize "puffing" losses when the container is opened, and using automatic dispensing and weighing equipment.

   i. Zinc Bags. Ensure proper handling and storage of zinc bags at the permittee's facility. Following are some control measure options: employee training on the handling and storage of zinc bags, indoor storage of zinc bags, and cleanup of zinc spills without washing the zinc into the storm drain, and the use of 2,500-pound sacks of zinc rather than 50- to 100-pound sacks.

   ii. Dumpsters. Minimize discharges of zinc from dumpsters. Following are some control measure options: covering the dumpster, moving the dumpster indoors, or providing a lining for the dumpster.

   iii. Dust Collectors and Baghouses. Minimize contributions of zinc to stormwater from dust collectors and baghouses. Replace or repair, as appropriate, improperly operating dust collectors and baghouses.

   iv. Grinding Operations. Minimize contamination of stormwater as a result of dust generation from rubber grinding operations. One control measure option is to install a dust collection system.

   v. Zinc Stearate Coating Operations. Minimize the potential for stormwater contamination from drips and spills of zinc stearate slurry that may be released to the storm drain. One control measure option is to use alternative compounds to zinc stearate.

b. Controls for Plastic Products Manufacturers. Minimize the discharge of plastic resin pellets in the permittee's stormwater discharges. Control measures to be considered for implementation (or their equivalents) include minimizing spills, cleaning up of spills promptly and thoroughly, sweeping thoroughly, pellet capturing, employee education, and disposal precautions.

3. Additional SWMP Requirements. (see also Part I.F)

a. Potential Pollutant Sources for Rubber Manufacturers. Document in the permittee's SWMP the use of zinc at the permittee's facility and the possible pathways through which zinc may be discharged in stormwater runoff.

4. Sector-Specific Benchmarks.

Table Y-1.		
Subsector (The permittee may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector Y1. Rubber Products Manufacturing (SIC 3011, 3021, 3052, 3053, 3061, 3069)	Total Zinc[1]	Hardness Dependent

[1] The benchmark values of some metals are dependent on water hardness. The ranges occur in 25 mg/L increments. Hardness Dependent Benchmarks follow in the table below:

Water Hardness Range	**Zinc** (mg/L)
0-25 mg/L	0.04
25-50 mg/L	0.05
50-75 mg/L	0.08
75-100 mg/L	0.11
100-125 mg/L	0.13
125-150 mg/L	0.16
150-175 mg/L	0.18
175-200 mg/L	0.20
200-225 mg/L	0.23
225-250 mg/L	0.25
250+ mg/L	0.26

Z. Sector Z – Leather Tanning and Finishing

The permiteee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee' facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector Z apply to stormwater discharges associated with industrial activity from Leather Tanning and Finishing facilities as identified by the SIC Code specified under Sector Z in Table A-1 of Appendix A of the permit.

2. Additional Practice-Based Effluent Limits.

a. Good Housekeeping Measures. (See also Part I.D.1.b)

i. Storage Areas for Raw, Semiprocessed, or Finished Tannery By-products. Minimize contamination of stormwater runoff from pallets and bales of raw, semiprocessed, or finished tannery by-products (e.g., splits, trimmings, shavings). Consider indoor storage or protection with polyethylene wrapping, tarpaulins, roofed storage, etc. Consider placing materials on an impermeable surface and enclosing or putting berms (or equivalent measures) around the area to prevent stormwater run-on and runoff.

ii. Material Storage Areas. Label storage containers of all materials (e.g., specific chemicals, hazardous materials, spent solvents, waste materials) minimize contact of such materials with stormwater.

iii. Buffing and Shaving Areas. Minimize contamination of stormwater runoff with leather dust from buffing and shaving areas. Consider dust collection enclosures, preventive inspection and maintenance programs, or other appropriate preventive measures.

iv. Receiving, Unloading, and Storage Areas. Minimize contamination of stormwater runoff from receiving, unloading, and storage areas. If these areas are exposed, consider the following (or their equivalents): covering all hides and chemical supplies, diverting drainage to the process sewer, or grade berming or curbing the area to prevent stormwater runoff.

v. Outdoor Storage of Contaminated Equipment. Minimize contact of stormwater with contaminated equipment. Consider the following (or their equivalents): covering equipment, diverting drainage to the process sewer, and cleaning thoroughly prior to storage.

vi. Waste Management. Minimize contamination of stormwater runoff from waste storage areas. Consider the following (or their equivalents): covering dumpsters, moving waste management activities indoors, covering waste piles with temporary covering material such as tarpaulins or polyethylene, and minimizing stormwater runoff by enclosing the area or building berms around the area.

3. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Identify in the permittee's SWMP where any of the following may be exposed to precipitation or surface runoff: processing and storage areas of the beamhouse, tanyard, and re-tan wet finishing and dry finishing operations.

b. Potential Pollutant Sources. Document in the facility's SWMP the following sources and activities that have potential pollutants associated with them (as appropriate): temporary or permanent storage of fresh and brine-cured hides; extraneous hide substances and hair; leather dust, scraps, trimmings, and shavings.

AA. Sector AA – Fabricated Metal Products

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector AA apply to stormwater discharges associated with industrial activity from Fabricated Metal Products facilities as identified by the SIC Codes specified under Sector AA in Table A-1 of Appendix A of the permit.

2. Additional Practice-Based Effluent Limits (see also Part I.D.1.)

a. Good Housekeeping Measures.

   i. Raw Steel Handling Storage. Minimize the generation of and/or recover and properly manage scrap metals, fines, and iron dust. Include measures for containing materials within storage handling areas.

   ii. Paints and Painting Equipment. Minimize exposure of paint and painting equipment to stormwater.

b. Spill Prevention and Response Procedures. Ensure that the necessary equipment to implement a cleanup is available to personnel. The following areas should be addressed

   i. Metal Fabricating Areas. Maintain clean, dry, orderly conditions in these areas. Consider using dry clean-up techniques.

   ii. Storage Areas for Raw Metal. Keep these areas free of conditions that could cause, or impede appropriate and timely response to, spills or leakage of materials. Consider the following (or their equivalents): maintaining storage areas so that there is easy access in the event of a spill, and labeling stored materials to aid in identifying spill contents.

   iii. Metal Working Fluid Storage Areas. Minimize the potential for stormwater contamination from storage areas for metal working fluids.

   iv. Cleaners and Rinse Water. Control and clean up spills of solvents and other liquid cleaners, control sand buildup and disbursement from sand-blasting operations, and prevent exposure of recyclable wastes. Substitute environmentally benign cleaners when possible.

   v. Lubricating Oil and Hydraulic Fluid Operations. Minimize the potential for stormwater contamination from lubricating oil and hydraulic fluid operations. Consider using monitoring equipment or other devices to detect and control leaks and overflows. Consider installing perimeter controls such as dikes, curbs, grass filter strips, or equivalent measures.

   vi. Chemical Storage Areas. Minimize stormwater contamination and accidental spillage in chemical storage areas. Include a program to inspect containers and identify proper disposal methods.

c. Spills and Leaks. In the permittee's spill prevention and response procedures, required by Part 2.1.2.4, pay attention to the following materials (at a minimum): chromium, toluene, pickle liquor, sulfuric acid, zinc and other water priority chemicals, and hazardous chemicals and wastes.

3. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Document in facility's SWMP where any of the following may be exposed to precipitation or surface runoff: raw metal storage areas; finished metal storage areas; scrap disposal collection sites; equipment storage areas; retention and detention basins; temporary and permanent diversion dikes or berms; right-of-way or perimeter diversion devices; sediment traps and barriers; processing areas, including outside painting areas; wood preparation; recycling; and raw material storage.

b. Potential Pollutant Sources. Document in the facility's SWMP the following additional sources and activities that have potential pollutants associated with them: loading and unloading operations for paints, chemicals, and raw materials; outdoor storage activities for raw materials, paints, empty containers, corn cobs, chemicals, and scrap metals; outdoor manufacturing or processing activities such as grinding, cutting, degreasing, buffing, and brazing; onsite waste disposal practices for spent solvents, sludge, pickling baths, shavings, ingot pieces, and refuse and waste piles.

4. Additional Inspection Requirements (see also Part I.G)

a. Inspections. At a minimum, include the following areas in all inspections: raw metal storage areas, finished product storage areas, material and chemical storage areas, recycling areas, loading and unloading areas, equipment storage areas, paint areas, and vehicle fueling and maintenance areas.

As part of the permittee's inspection, also inspect areas associated with the storage of raw metals, spent solvents and chemicals storage areas, outdoor paint areas, and drainage from roof. Potential pollutants include chromium, zinc, lubricating oil, solvents, aluminum, oil and grease, methyl ethyl ketone, steel, and related materials.

5. Sector-Specific Benchmarks.

Table AA-1

Subsector (The permittee may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Concentration**
Subsector AA1. Fabricated Metal Products, except Coating (SIC 3411-3499; 3911-3915)	Total Aluminum	0.75 mg/L
	Total Iron	1.0 mg/L
	Total Zinc[1]	Hardness Dependent
	Nitrate plus Nitrite Nitrogen	0.68 mg/L
Subsector AA2. Fabricated Metal Coating and Engraving (SIC 3479)	Total Zinc[1]	Hardness Dependent
	Nitrate plus Nitrite Nitrogen	0.68 mg/L

[1] The benchmark values of some metals are dependent on water hardness. The ranges occur in 25 mg/L increments. Hardness Dependent Benchmarks follow in the table below:

Water Hardness Range	**Zinc** (mg/L)
0-25 mg/L	0.04
25-50 mg/L	0.05
50-75 mg/L	0.08
75-100 mg/L	0.11
100-125 mg/L	0.13
125-150 mg/L	0.16
150-175 mg/L	0.18
175-200 mg/L	0.20
200-225 mg/L	0.23
225-250 mg/L	0.25
250+ mg/L	0.26

AB. Sector AB – Transportation Equipment, Industrial or Commercial Machinery Facilities

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector AB apply to stormwater discharges associated with industrial activity from Transportation Equipment, Industrial or Commercial Machinery facilities as identified by the SIC Codes specified under Sector AB in Table A-1 of Appendix A of the permit.

2. Additional SWMP Requirements. (see also Part I.F)

a. Drainage Area Site Map. Identify in the facility's SWMP where any of the following may be exposed to precipitation or surface runoff: vents and stacks from metal processing and similar operations.

AC. Sector AC –Electronic and Electrical Equipment and Components, Photographic and Optical Goods

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

The requirements in Sector AC apply to stormwater discharges associated with industrial activity from facilities that manufacture Electronic and Electrical Equipment and Components, Photographic and Optical goods as identified by the SIC Codes specified in Table A-1 of Appendix A of the permit.

2. Additional Requirements.

No additional sector-specific requirements apply.

AD. Sector AD – Stormwater Discharges Designated by the Division Director as Requiring Permits

The permittee must comply with Part III sector-specific requirements associated with the facility's primary industrial activity and any co-located industrial activities, as defined in Appendix C. The sector-specific requirements apply to those areas of the permittee's facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Covered Stormwater Discharges.

Sector AD is used to provide permit coverage for facilities designated by the Division as needing a stormwater permit, and any discharges of stormwater associated with industrial activity that do not meet the description of an industrial activity covered by Sectors A-AC.

a. Eligibility for Permit Coverage. Because this sector is primarily intended for use by discharges designated by the Division as needing a stormwater permit (which is an atypical circumstance), and the permittee's facility may or may not normally be discharging stormwater associated with industrial activity, the permittee must obtain the Division's written permission to use this permit prior to submitting an APPLICATION. If the permittee is authorized to use this permit, the permittee will still be required to ensure that the facility's discharges meet the basic eligibility provisions of this permit at Part I.A.

2. Sector-Specific Benchmarks and Effluent Limits.

The Division will establish any additional monitoring and reporting requirements for the permittee's facility prior to authorizing the permittee to be covered by this permit. Additional monitoring requirements would be based on the nature of activities at the permittee's facility and the facility's stormwater discharges.

Appendix A. Facilities and Activities Covered

Permit eligibility is limited to discharges from facilities in the "sectors" of industrial activity summarized in Table A-1. These sector descriptions are based on Standard Industrial Classification (SIC) Codes and Industrial Activity Codes. References to "sectors" in this permit (e.g., sector-specific monitoring requirements) refer to these groupings. A facility may be subject to more than one sector/subsector.

Table A. Sectors of Industrial Activity Covered by This Permit

Subsector	SIC Code or Activity Code[1]	Activity Represented
Sector A – Timber Products		
A1	2421	General Sawmills and Planing Mills
A2	2491	Wood Preserving
A3	2411	Log Storage and Handling
A4	2426	Hardwood Dimension and Flooring Mills
	2429	Special Product Sawmills, Not Elsewhere Classified
	2431-2439 (except 2434)	Millwork, Veneer, Plywood, and Structural Wood (see Sector W)
	2448	Wood Pallets and Skids
	2449	Wood Containers, Not Elsewhere Classified
	2451, 2452	Wood Buildings and Mobile Homes
	2493	Reconstituted Wood Products
	2499	Wood Products, Not Elsewhere Classified
A5	2441	Nailed and Lock Corner Wood Boxes and Shook
Sector B – Paper and Allied Products		
B1	2631	Paperboard Mills
B2	2611	Pulp Mills
	2621	Paper Mills
	2652-2657	Paperboard Containers and Boxes
	2671-2679	Converted Paper and Paperboard Products, Except Containers and Boxes
Sector C – Chemical and Allied Products Manufacturing, and Refining		
C1	2873-2879	Agricultural Chemicals
C2	2812-2819	Industrial Inorganic Chemicals
C3	2841-2844	Soaps, Detergents, and Cleaning Preparations; Perfumes, Cosmetics, and Other Toilet Preparations
C4	2821-2824	Plastics Materials and Synthetic Resins, Synthetic Rubber, Cellulosic and Other Manmade Fibers Except Glass
C5	2833-2836	Medicinal Chemicals and Botanical Products; Pharmaceutical Preparations; in vitro and in vivo Diagnostic Substances; and Biological Products, Except Diagnostic Substances
	2851	Paints, Varnishes, Lacquers, Enamels, and Allied Products
	2861-2869	Industrial Organic Chemicals
	2891-2899	Miscellaneous Chemical Products
	3952 (limited to list of inks and paints)	Inks and Paints, Including China Painting Enamels, India Ink, Drawing Ink, Platinum Paints for Burnt Wood or Leather Work, Paints for China Painting, Artist's Paints and Artist's Watercolors
	2911	Petroleum Refining
Sector D – Asphalt Paving and Roofing Materials and Lubricant Manufacturing		
D1	2951, 2952	Asphalt Paving and Roofing Materials
D2	2992, 2999	Miscellaneous Products of Petroleum and Coal
Sector E – Glass, Clay, Cement, Concrete, and Gypsum Products		
E1	3251-3259	Structural Clay Products
	3261-3269	Pottery and Related Products

E2	3271-3275	Concrete, Gypsum, and Plaster Products
E3	3211	Flat Glass
	3221, 3229	Glass and Glassware, Pressed or Blown
	3231	Glass Products Made of Purchased Glass
	3241	Hydraulic Cement
	3281	Cut Stone and Stone Products
	3291-3299	Abrasive, Asbestos, and Miscellaneous Nonmetallic Mineral Products
Sector F – Primary Metals		
F1	3312-3317	Steel Works, Blast Furnaces, and Rolling and Finishing Mills
F2	3321-3325	Iron and Steel Foundries
F3	3351-3357	Rolling, Drawing, and Extruding of Nonferrous Metals
F4	3363-3369	Nonferrous Foundries (Castings)
F5	3331-3339	Primary Smelting and Refining of Nonferrous Metals
	3341	Secondary Smelting and Refining of Nonferrous Metals
	3398, 3399	Miscellaneous Primary Metal Products
Sector I – Oil and Gas Extraction		
I1	1311	Crude Petroleum and Natural Gas
	1321	Natural Gas Liquids
	1381-1389	Oil and Gas Field Services
Sector K – Hazardous Waste Treatment, Storage, or Disposal Facilities		
K1	HZ	Hazardous Waste Treatment, Storage, or Disposal Facilities, including those that are operating under interim status or a permit under subtitle C of RCRA
Sector L – Landfills, Land Application Sites, and Open Dumps		
L1	LF	All Landfill, Land Application Sites and Open Dumps
L2	LF	All Landfill, Land Application Sites and Open Dumps, except Municipal Solid Waste Landfill (MSWLF) Areas Closed in Accordance with 40 CFR 258.60
Sector M – Automobile Salvage Yards		
M1	5015	Automobile Salvage Yards
Sector N – Scrap Recycling and Waste Recycling Facilities		
N1	5093	Scrap Recycling and Waste Recycling Facilities except Source-Separated Recycling
N2	5093	Source-separated Recycling Facility
Sector O – Steam Electric Generating Facilities		
O1	SE	Steam Electric Generating Facilities, including coal handling sites
Sector P – Land Transportation and Warehousing		
P1	4011, 4013	Railroad Transportation
	4111-4173	Local and Highway Passenger Transportation
	4212-4231	Motor Freight Transportation and Warehousing
	4311	United States Postal Service
	5171	Petroleum Bulk Stations and Terminals
Sector Q – Water Transportation		
Q1	4412-4499	Water Transportation Facilities
Sector R – Ship and Boat Building and Repair Yards		
R1	3731, 3732	Ship and Boat Building or Repairing Yards
Sector S – Air Transportation		
S1	4512-4581	Air Transportation Facilities
Sector T – Treatment Works		
T1	TW	Treatment Works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR Part 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which

		not physically located in the confines of the facility, or areas that are in are compliance with section 405 of the CWA.
Sector U – Food and Kindred Products		
U1	2041-2048	Grain Mill Products
U2	2074-2079	Fats and Oils Products
U3	2011-2015	Meat Products
	2021-2026	Dairy Products
	2032-2038	Canned, Frozen, and Preserved Fruits, Vegetables, and Food Specialties
	2051-2053	Bakery Products
	2061-2068	Sugar and Confectionery Products
	2082-2087	Beverages
	2091-2099	Miscellaneous Food Preparations and Kindred Products
	2111-2141	Tobacco Products
Sector V – Textile Mills, Apparel, and Other Fabric Products		
V1	2211-2299	Textile Mill Products
	2311-2399	Apparel and Other Finished Products Made from Fabrics and Similar Materials
	3131-3199	Leather and Leather Products (note: see Sector Z1 for Leather Tanning and Finishing)
Sector W – Furniture and Fixtures		
W1	2434	Wood Kitchen Cabinets
	2511-2599	Furniture and Fixtures
Sector X – Printing and Publishing		
X1	2711-2796	Printing, Publishing, and Allied Industries
Sector Y – Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries		
Y1	3011	Tires and Inner Tubes
	3021	Rubber and Plastics Footwear
	3052, 3053	Gaskets, Packing and Sealing Devices, and Rubber and Plastic Hoses and Belting
	3061, 3069	Fabricated Rubber Products, Not Elsewhere Classified
Y2	3081-3089	Miscellaneous Plastics Products
	3931	Musical Instruments
	3942-3949	Dolls, Toys, Games, and Sporting and Athletic Goods
	3951-3955 (except 3952 – see Sector C)	Pens, Pencils, and Other Artists' Materials
	3961, 3965	Costume Jewelry, Costume Novelties, Buttons, and Miscellaneous Notions, Except Precious Metal
	3991-3999	Miscellaneous Manufacturing Industries
Sector Z – Leather Tanning and Finishing		
Z1	3111	Leather Tanning and Finishing
Sector AA – Fabricated Metal Products		
AA1	3411-3499 (except 3479)	Fabricated Metal Products, Except Machinery and Transportation Equipment, and Coating, Engraving, and Allied Services.
	3911-3915	Jewelry, Silverware, and Plated Ware
AA2	3479	Fabricated Metal Coating and Engraving
AB. Sector AB – Transportation Equipment, Industrial or Commercial Machinery Facilities		
AB1	3511-3599 (except 3571-3579)	Industrial and Commercial Machinery, Except Computer and Office Equipment (see Sector AC)
	3711-3799 (except 3731, 3732)	Transportation Equipment Except Ship and Boat Building and Repairing (see Sector R)

AC. Sector AC –Electronic and Electrical Equipment and Components, Photographic and Optical Goods		
AC1	3571-3579	Computer and Office Equipment
	3812-3873	Measuring, Analyzing, and Controlling Instruments; Photographic and Optical Goods, Watches, and Clocks
	3612-3699	Electronic and Electrical Equipment and Components, Except Computer Equipment
AD. Sector AD – Stormwater Discharges Designated by the Division Director as Requiring Permits		
AD1	Other stormwater discharges designated by the Division Director as needing a permit (see 40 CFR 122.26(a)(9)(i)(C) & (D)) or any facility discharging stormwater associated with industrial activity not described by any of Sectors A-AC. NOTE: Facilities may not elect to be covered under Sector AD. Only the Division Director may assign a facility to Sector AD.	

[1]A complete list of SIC Codes (and conversions from the newer North American Industry Classification System" (NAICS)) can be obtained from the Internet at www.census.gov/epcd/www/naics.html or in paper form from various locations in the document titled *Handbook of Standard Industrial Classifications*, Office of Management and Budget, 1987.

Appendix B: Information Summaries

1. Permit Required Reports and Submittals

Permit Part	Report or Submittal	Minimum Frequency	Due Date
Part I.A.3	Application for permit coverage	As necessary	90 days prior to discharge
Parts I.E and I.F	Stormwater Management Plan (SWMP)	At Division request	Within 14 days of request
Part I.K.1	Discharge Monitoring Reports	Quarterly	Each calendar quarter, no later than the 28th day of the following month
Part I.K.2.	Annual Report	Annually	March 31 of each year
Part II.A	Noncompliance notification	As necessary	As necessary

2. Permit Required Inspections and Monitoring

Permit Part	Report or Submittal	Minimum Frequency	Due Date
Part I.G	Facility Inspections	Quarterly	None
Part I.I.1	Visual monitoring	Quarterly	None
Part I.I.2	Benchmark monitoring	Quarterly	Quarterly
Part I.I.3	ELG monitoring	Annual	Annually
Part I.I.4	Water Quality Standards monitoring	Quarterly	Quarterly

3. Permit Required Onsite Documentation

Permit Part	Document Title
Part I.E.5	Stormwater Management Plan (SWMP)
Part I.E.4	Copy of Permit
Part I.E.4	Copy of Permit Certification
Part I.G.3	Site Inspection Reports
Parts I.K.5 and 6	Original Sampling Records (Field Notes and Laboratory Reports)
Parts I.F and I.K.5	Copies of Corrective Action Reports
Part I.K.2	Copies of Annual Reports

Appendix C. Definitions and Abbreviations (for the purposes of this permit)

Best Management Practices (BMPs) – schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to state waters. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. See 5 CCR 1002-61.2(9).

Co-located Industrial Activities – Any industrial activities, excluding the primary industrial activity(ies), located on-site that are defined by the stormwater regulations at 5 CCR 1002-61.3(2). An activity at a facility is not considered co-located if the activity, when considered separately, does not meet the description of a category of industrial activity covered by the stormwater regulations or identified by the SIC code list in Appendix A.

Control Measure – refers to any BMP or other method (including effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the state.

Discharge – when used without qualification, means the "discharge of a pollutant." See 5 CCR 1002-61.2(22).

Discharge of a pollutant – the introduction or addition of a pollutant into state waters. See 25-8-103(3) C.R.S.

EPA Approved or Established Total Maximum Daily Loads (TMDLs) – "EPA Approved TMDLs" are those that are developed by a State and approved by EPA. "EPA Established TMDLs" are those that are developed by EPA.

Existing Discharger – an operator applying for coverage under this permit for discharges authorized previously under an NPDES general or individual permit.

Good Engineering, Hydrologic and Pollution Control Practices – methods, procedures, and practices that a) are based on basic scientific fact(s); b) reflect best industry practices and standards; c) are appropriate for the conditions and pollutant sources; and d) provide appropriate solutions to meet the associated permit requirements, including all effluent limitations.

Impaired Water (or "Water Quality Impaired Water" or "Water Quality Limited Segment") – A water is impaired for purposes of this permit if it has been identified by a State or EPA pursuant to Section 303(d) of the Clean Water Act as not meeting applicable State water quality standards (these waters are called "water quality limited segments" under 40 CFR 30.2(j)). Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established.

Industrial Activity – the 10 categories of industrial activities included in the definition of "stormwater discharges associated with industrial activity" as defined in 5 CCR 1002-61.3(2).

Industrial Stormwater – stormwater runoff from industrial activity.

Material handling activities – the storage, loading and unloading, transportation, disposal, or conveyance of any raw material, intermediate product, final product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with stormwater drained from the above described areas.

Measurable storm event – a storm event that results in an actual discharge from the facility.

Minimize – reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice.

Municipal Separate Storm Sewer – a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or 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;
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a combined sewer; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW). See 5 CCR 1002-61.2(62).

New Discharger – means any building, structure, facility, or installation from which there is or may be a discharge of pollutants that did not commence at the particular site before August 13, 1979, that is not a new source, and that has never received a final effective permit for discharges at the site. See 5 CCR 1002-61.2(65).

New Source –means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the promulgation of standards of performance for the particular source, pursuant to section 306 of the Clean Water Act. The term also applies where a standard of performance has been proposed, provided that the standard is promulgated within 120 days of its proposal. Except as otherwise provided in an applicable new source performance standard, a source is a "new source" if it meets this definition of "new source", and:

(a) It is constructed at a site at which no other source is located; or
(b) It totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or
(c) Its processes are substantially independent of an existing source at the same site. In determining whether these processes are substantially independent, the Division shall consider such factors as the extent to which the new facility is integrated with the existing plant; and the extent to which the new facility is engaged in the same general type of activity as the existing source. See 5 CCR 1002-61.2(67).

New Source Performance Standards (NSPS) – technology-based standards for facilities that qualify as new sources under 40 CFR 122.2 and 40 CFR 122.29.

No exposure – all industrial materials or activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. 5 CCR 1002-61.3(2)(h).

Operator – any entity with a stormwater discharge associated with industrial activity that meets either of the following two criteria:
(i) The entity has operational control over industrial activities, including the ability to modify those activities; or
(ii) The entity has day-to-day operational control of activities at a facility necessary to ensure compliance with the permit (e.g., the entity is authorized to direct workers at a facility to carry out activities required by the permit).

Outstanding Waters – For antidegradation purposes, pursuant to outstanding waters are identified by states as having high quality waters constituting an Outstanding Natural Resource Water (ONRW), such as waters of National Parks and State Parks, wildlife refuges, and waters of exceptional recreational or ecological significance.

Person – an individual, corporation, partnership, association, state or political subdivision thereof, federal agency, state agency, municipality, Commission, or interstate body. See 5 CCR 1002-61.2(73).

Point source – any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. "Point Source" does not include irrigation return flow. See 5 CCR 1002-61.2(75).

Pollutant – dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal or agricultural waste. See 5 CCR 1002-61.2(76).

Primary industrial activity – includes any activities performed on-site which are (1) identified by the facility's primary SIC code; or (2) included in the narrative descriptions of 5 CCR 1002-61.3(2). [For co-located activities covered by multiple SIC codes, it is recommended that the primary industrial determination be based on the value of receipts or revenues or, if such information is not available for a particular facility, the number of employees or production rate for each process may be compared. The operation that generates the most revenue or employs the most personnel is the operation in which the facility is primarily engaged. In situations where the vast majority of on-site activity falls within one SIC code, that activity may be the primary industrial activity.]

Qualified Personnel – Qualified personnel are those who possess the knowledge and skills to assess conditions and activities that could impact stormwater quality at a facility, and who can also evaluate the effectiveness of control measures.

Reportable Quantity Release – a release of a hazardous substance at or above the established legal threshold that requires emergency notification. Refer to 40 CFR Parts 110, 117, and 302 for complete definitions and reportable quantities for which notification is required.

Reviewable Waters – For antidegradation purposes, reviewable waters are characterized as having water quality that exceeds the levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water.

Significant materials – includes, but is not limited to raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of CERCLA as amended by SARA (1986); any chemical the facility is required to report pursuant to Section 313 of Title III of SARA (1986); fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges. See 5 CCR 1002-61.2(76).

Significant spills and leaks – include, but are not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under CWA Section 311 (see 40 CFR 110.6 and 40 CFR 117.21) or Section 102 of the Comprehensive Environment al Response, Compensation and Liability Act (CERCLA), 42 USC §9602. This permit does not relieve the permittee of the reporting requirements of 40 CFR 110, 40 CFR 117, and 40 CFR 302 relating to spills or other releases of oils or hazardous substances.

Stormwater – stormwater runoff, snow melt runoff, and surface runoff and drainage. See 5 CCR 1002-61.2(103).

Stormwater Discharges Associated with Industrial Activity – the discharge from any conveyance that is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. Except for the provision of 61.3(2)(c) that addresses construction activities associated with oil and gas operations or facilities, the term does not include discharges from facilities or activities excluded from the NPDES program under 40 CFR Part 122 or the CDPS program under Regulation No. 61.

For the categories of industries identified in this permit, the term includes, but is not limited to, stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater. See 5 CCR 1002-61.3(2)(e).

Total Maximum Daily Loads (TMDLs) – A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes wasteload allocations (WLAs) for point source discharges; load allocations (LAs) for nonpoint sources and/or natural background, and must include a margin of safety (MOS) and account for seasonal variations. (See section 303(d) of the Clean Water Act and 40 CFR 130.2 and 130.7).

Water Quality Impaired – See 'Impaired Water'.

Water Quality Standards – means a narrative and/or numeric restriction established by the Commission applied to state surface waters to protect one or more beneficial uses of such waters. Whenever only numeric or only narrative standards are intended, the wording shall specifically designate which is intended. See 5 CCR 1002- 31.5(37).

ABBREVIATIONS

BMP – Best Management Practice
CDPS – Colorado Discharge Permit System
CERCLA – Comprehensive Environmental Response, Compensation and Liability Act
COD – Chemical Oxygen Demand
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 *et seq*)
DMR – Discharge Monitoring Report
EPA – U. S. Environmental Protection Agency
NPDES – National Pollutant Discharge Elimination System (change to)
NSPS – New Source Performance Standard
RCRA – Resource Conservation and Recovery Act
SARA – Superfund Amendments and Reauthorization Act
SIC – Standard Industrial Classification
SPCC – Spill Prevention, Control, and Countermeasures
SWMP – Stormwater Management Plan
TMDL – Total Maximum Daily Load
TSDF – Treatment, Storage, or Disposal Facility
TSS – Total Suspended Solids
USGS – United States Geological Survey
WQS – Water Quality Standard

APPENDIX 3

Evaluation of Construction BMP's Form

APPENDIX 3

Evaluation of Construction BMP's Form

Stormwater Field Inspection Form (Construction Projects)

El Paso County Colorado Stormwater Management Program
Phone (719) 520-6826 Fax (719) 520-6879
Email: johnchavez@elpasoco.com

General Information

Name of Project/Site: _____ ESQCP#: _____
Address/Directions: _____
Name(s) of Onsite Representative(s): _____ phone: _____

Permit Holder (If not permitted, Owner or Operator)

Owner Name: _____ Name of Responsible Person: _____
Title of Responsible Person: _____ Phone: _____
Address: _____
ECS Name: _____ ECS Phone Number: _____

Inspector(s): _____ Inspecting Agency: _____
Persons present: _____

Type of Inspection: Self Monitoring ☐ Initial ☐ Compliance ☐ Recon ☐ Other: _____
Date conducted: _____ Pictures Taken? Yes ☐ No ☐
Construction start date? _____

Records Review

Copy of SWMP confirmed on site?	Yes☐	No☐
SWMP Review:		
1. Site description as required in the permit?	Yes☐	No☐
Notes: _____		
2. Site map as required in the permit?	Yes☐	No☐
Notes: _____		
3. BMPs for stormwater pollution prevention:		
a. Erosion and sediment controls as required in the permit?	Yes☐	No☐
Notes: _____		
b. Materials handling and spill prevention?	Yes☐	No☐
Notes: _____		
4. Final Stabilization and long term stormwater management as required in the permit	Yes☐	No☐
Notes: _____		
5. Other controls as required in the permit?	Yes☐	No☐
Notes: _____		
6. Inspection and maintenance as required in the permit?	Yes☐	No☐
Notes: _____		
Inspection records kept?	Yes☐	No☐
Inspections conducted as required in the permit?	Yes☐	No☐

Notes: _____

Site Inspection

BMPs implemented for vehicle tracking control? Yes☐ No☐
Notes: _____

BMPs implemented for sediment control? Yes☐ No☐
Notes: _____

BMPs implemented for erosion control? Yes☐ No☐
Notes: _____

BMPs implemented for materials handling, spill prevention, and spill cleanup? Yes☐ No☐
Notes: _____

BMPs implemented for good housekeeping? Yes☐ No☐
Notes: _____

Inspection and maintenance of stormwater management BMPs implemented per approved plan? Yes☐ No☐
Notes: _____

Evidence of offsite transport of sediment or other pollutants? Yes☐ No☐
Notes: _____

Evidence of offsite transport of sediment or other pollutants reaching state waters? Yes☐ No☐
Notes: _____

Evidence of discharges other than stormwater? Yes☐ No☐
Notes: _____

FIELD NOTES: _____

APPENDIX 4

SWMP Site Map

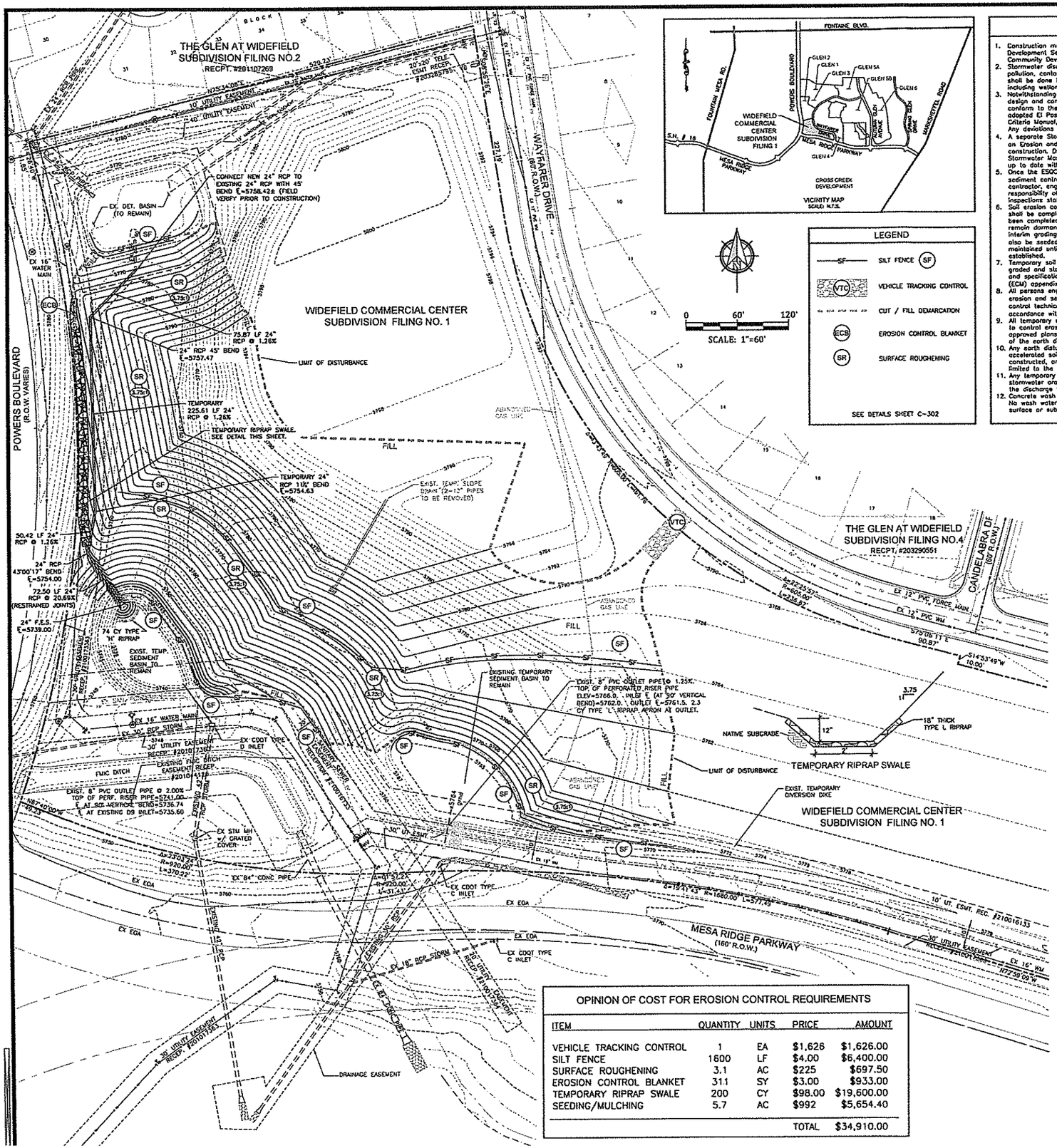
Figures 2, 3, 4 and 4A

APPENDIX 4

SWMP Site Map

Figures 2, 3, 4 and 4, Glen at Widefield East

C301 Widefield Commercial Early Grading



STANDARD EPC GRADING AND EROSION CONTROL NOTES

1. Construction may not commence until a Construction Permit is obtained from Development Services and a Preconstruction Conference is held with Planning and Community Development Inspections.
2. Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off site waters, including wetlands.
3. Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations to regulations and standards must be requested, and approved in writing.
4. A separate Stormwater Management Plan (SWMP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. During construction the SWMP is the responsibility of the designated Stormwater Manager. The SWMP shall be located on site at all times and shall be kept up to date with work progress and changes in the field.
5. Once the ESQCP has been issued, the contractor may install the initial stage erosion and sediment control BMP's as indicated on the CEC. A preconstruction meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County DSD inspections staff.
6. Soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within 21 calendar days after final grading, or earth disturbance, has been completed. Disturbed areas and stockpiles, which are not at final grade but will remain dormant for longer than 30 days, shall also be mulched within 21 days after interim grading. And area that is going to remain on interim for more than 60 days shall also be seeded. All temporary soil erosion control measures and BMP'S shall be maintained until permanent soil erosion control measures are implemented and established.
7. Temporary soil erosion control facilities shall be removed and earth disturbance areas graded and stabilized with permanent soil erosion control measures pursuant to standards and specification prescribed in the DCM Volume II and the Engineering Criteria Manual (ECM) appendix I.
8. All persons engaged with earth disturbance shall implement and maintain acceptable soil erosion and sediment control measures including BMP's in conformance with the erosion control technical standards of the Drainage Criteria Manual (DCM) Volume II and in accordance with the Stormwater Management Plan (SWMP).
9. All temporary erosion control facilities including BMPs and all permanent facilities intended to control erosion of any earth disturbance operations shall be installed as defined in the approved plans, the SWMP and the DCM Volume II and maintained throughout the duration of the earth disturbance operation.
10. Any earth disturbance shall be conducted in such a manner so as to effectively reduce accelerated soil erosion and resulting sedimentation. All disturbances shall be designed, constructed, and completed so that the exposed area of any disturbed land shall be limited to the shortest practical period of time.
11. Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be designed to limit the discharge to a non-erosive velocity.
12. Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to runoff to State Waters, including any surface or subsurface storm drainage system or facilities.
13. Erosion control blanketing is to be used on slopes steeper than 3:1.
14. Building, construction, excavation, or other waste materials shall not be temporarily placed or stored in the street, alley, or other public way, unless in accordance with an approved Traffic Control Plan. BMPs may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances.
15. Vehicle tracking of soils and construction debris off-site shall be minimized. Materials tracked offsite shall be cleaned up and properly disposed of immediately.
16. Contractor shall be responsible for the removal of all wastes from the construction site for disposal in accordance with local and State regulatory requirements. No construction debris, tree slash, building material wastes or unused building materials shall be buried, dumped, or discharged at the site.
17. The owner, site developer, contractor, and/or their authorized agents shall be responsible for the removal of all constructions debris, dirt, trash, rock, sediment, and sand that may accumulate in the storm sewer or other drainage conveyance and stormwater appurtenances as a result of site development.
18. The quantity of materials stored on the project site shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with original manufacturer's labels.
19. No chemicals are to be used by the contractor, which have the potential to be released in stormwater unless permission for the use of a specific chemical is granted in writing by the ECM Administrator. In granting the use of such chemicals, special conditions and monitoring may be required.
20. Bulk storage structures for petroleum products and other chemicals shall have adequate protection so as to contain all spills and prevent any spilled material from entering State Waters, including any surface or subsurface storm drainage system or facilities.
21. No person shall cause the impediment of stormwater flow in the flow line of the curb and gutter or in the ditch/line.
22. Individuals shall comply with the "Colorado Water Quality Control Act" (Title 25, Article8, CRS), and the Clean Water Act" (33 USC 1344), in addition to the requirements included in the DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the Contractor prior to the construction (NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and laws, rules, or regulations of other Federal, State, or County Agencies, the more restrictive laws, rules, or regulations shall apply.
23. All construction traffic must enter/exit the site at approved construction access points.
24. Prior to actual construction the permitee shall verify the location of existing utilities.
25. A water source shall be available on site during earthwork operations and utilized as required to minimize dust from earthwork equipment and wind.
26. The soils report for the site has been prepared by STE Engineering entitled "Preliminary Soils Investigation Mini-Warehouse Site, Widefield, Colorado and shall be considered a part of these plans.
27. At least ten days prior to the anticipated start of construction, for projects that will disturb 1 acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SWMP), of which this grading and erosion control plan may be a part. For information or application materials contact:
    Colorado Department of Public Health and Environment
    Water Quality Control Division
    WQCD – Permits
    4300 Cherry Creek Drive South
    Denver, Colorado 80246-1530
    Attn: Permits Unit

PROJECT SPECIFIC GRADING AND EROSION CONTROL NOTES

1. All earthwork required of this construction shall be completed in accordance with all applicable sections of the Project Specifications and Soil Investigation Report (Geotechnical Report).
2. Rubbish including timber, concrete rubble, trees, brush, and asphalt shall not be backfilled adjacent to any of the structures or be in the placement of any unclassified fill. The Contractor shall be responsible for the removal and hauling of such materials to a suitable spoil area. Costs associated with the removal of such materials shall be paid for as documented in the Project Specifications.
3. Excess excavation shall become the property of the Contractor and shall be disposed of at the Contractor's expense. The cost of haulage and spoiling of excess excavated materials shall be paid for as documented in the Project Specifications.
4. Water shall be used as a dust palliative as required and shall be included in the cost for earthwork item(s). No separate payment will be made for dust control associated with the site construction.
5. The road grades shall be cleared of vegetation and the topsoil stockpiled for later use.
6. All grading shall be in conformance with the Geotechnical Report for the area.
7. Placement of fill for roadway embankments shall be completed in conformance with the Geotechnical Report.
8. Grading contours shown on this plan are to final grade.
9. Compaction under filled areas, including roadway and detention basin embankments, shall be 95 percent of the maximum Standard Proctor Density (ASTM D698) at two (2) percent of optimum moisture content.
10. No rubble or debris shall be placed in the backfill under any of the proposed buildings, streets, curb & gutter, sidewalk and drainage structures or within five (5) feet of a building footprint. Properly graded rubble may be used in some locations as specified and verified by the Geotechnical Engineer.
11. Contractor is responsible for reviewing the site prior to bidding to verify site conditions.
12. Contractor is responsible for providing erosion control measures as approved by the El Paso County PSD Engineering Division and as may be required by the El Paso County Inspector.
13. All slopes equal to or greater than 3:1 shall require anchored soil retention blanket (SRB), Geocair 700 or equal.
14. The Developer is responsible for maintaining erosion control measures until a mature stage of vegetation is established.
15. All soils used for fill must be approved by a representative of the Geotechnical Engineer.
16. All natural ground to receive fill must be properly scarified, watered and compacted prior to placing fill.
17. The Contractor is solely responsible for the design, maintenance and operation of any required dewatering system. The Contractor shall perform such independent investigation as he deems necessary to satisfy himself as to the subsurface groundwater conditions and unstable soil conditions to be encountered throughout the construction. Contractor shall coordinate the dewatering system with El Paso County when associated with public facilities.
18. No fill shall be placed, spread or rolled while it is frozen, thawing or during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until a representative of the Geotechnical Engineer indicates that the moisture content and density of the previously placed fill are as specified. Fill surfaces may be scarified and recompacted after rainfall if necessary, to obtain proper moisture density relation.
19. Additional erosion control structures and/or grading may be required at the time of construction.
20. Sediment removal for erosion control facilities shall be performed continuously for proper function.
21. Base mapping was provided by Pinnacle Land Surveying. The date of the last survey update was January 2014.
22. Proposed Construction Schedule:
    Begin Construction: Spring 2018
    End Construction: Summer 2019
    Total Site Area = 21.7 Acres
23. Area to be disturbed = 5.7 Acres (est.).
    Existing 100-year runoff coefficient = 0.50
    Proposed 100-year runoff coefficient = 0.50
    Existing Hydrologic Soil Groups: D
    (D---Nelson-Tassel fine sandy loams)
24. Site is currently undeveloped and covered with native grasses on moderate to steep slopes (3%-18%).
25. Site is located in the Jimmy Camp Creek Drainage Basin.

EROSION CONTROL INSPECTION AND MAINTENANCE

1. A THOROUGH INSPECTION OF THE EROSION CONTROL PLAN/STORMWATER MANAGEMENT SYSTEM SHALL BE PERFORMED EVERY 14 DAYS AS WELL AS AFTER ANY RAIN OR SNOWMELT EVENT THAT CAUSES SURFACE EROSION
2. ANY ACCUMULATED TRASH OR DEBRIS SHALL BE REMOVED FROM OUTLETS.
3. AN INSPECTION AND MAINTENANCE LOG SHALL BE KEPT.

811 Know what's **below.** **Call** before you dig.

SEED MIX

AREAS DISTURBED BY THE EARTHWORK ACTIVITIES AND NOT RECEIVING OTHER TREATMENT SHALL BE PERMANENTLY REVEGETATED WITH THE FOLLOWING SEED MIX.

SPECIES	VARIETY	lbs/acre
SIDEOATS GRAMA	*El Reno*	3.0
WESTERN WHEAT GRASS	*Barton*	2.5
SLENDER WHEAT GRASS	*Native*	2.0
LITTLE BLUESTEM	*Pastura*	2.0
SAND DROPSEED	*Native*	0.5
SWITCH GRASS	*Nebraska 28*	3.0
WEEPING LOVE GRASS	*Morpha*	1.0
		14.0 lbs

SEEDING APPLICATION: DRILL SEED 1/4" TO 1/2" INTO TOPSOIL. IN AREAS INACCESSIBLE TO A DRILL, HAND BROADCAST AT DOUBLE THE RATE AND RAKE 1/4" TO 1/2" INTO THE TOPSOIL. MULCHING APPLICATION: 1-1/2 TONS NATIVE HAY PER ACRE, MECHANICALLY CRIMPED INTO THE TOPSOIL.

OPINION OF COST FOR EROSION CONTROL REQUIREMENTS

ITEM	QUANTITY	UNITS	PRICE	AMOUNT
VEHICLE TRACKING CONTROL	1	EA	$1,626	$1,626.00
SILT FENCE	1600	LF	$4.00	$6,400.00
SURFACE ROUGHENING	3.1	AC	$225	$697.50
EROSION CONTROL BLANKET	311	SY	$3.00	$933.00
TEMPORARY RIPRAP SWALE	200	CY	$98.00	$19,600.00
SEEDING/MULCHING	5.7	AC	$992	$5,654.40
			TOTAL	$34,910.00

STATEMENTS

ENGINEER'S STATEMENT
THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLAN.

ANDREW W. McCORD P.E. 25057
FOR AND ON BEHALF OF KIOWA ENGINEERING CORPORATION

DATE

OWNER'S STATEMENT
THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

NAME: J. MARK WATSON, PRESIDENT
GLEN DEVELOPMENT COMPANY, 3 WIDEFIELD BOULEVARD, COLORADO SPRINGS, COLORADO 80911

DATE

EL PASO COUNTY
COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA AND ENGINEERING CRITERIA MANUAL, AS AMENDED. IN ACCORDANCE WITH MCM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENTS DIRECTORS DISCRETION.

JENNIFER IRVINE, P.E.
COUNTY ENGINEER/ECM ADMINISTRATOR

DATE

Celebrating 30 years
Kiowa Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

WIDEFIELD COMMERCIAL CENTER SUBDIVISION FIL. NO. 1
OVERLOT GRADING PLAN
SITE GRADING & EROSION CONTROL PLAN
EL PASO COUNTY, COLORADO

Project No.:	17044
Date:	May 10, 2018
Design:	NRK
Drawn:	CAD
Check	AWMc
Revisions:	

SHEET
C-301

SEED MIX

AREAS DISTURBED BY THE EARTHWORK ACTIVITIES AND NOT RECEIVING OTHER TREATMENT SHALL BE PERMANENTLY REVEGETATED WITH THE FOLLOWING SEED MIX.

SPECIES	VARIETY	lbs/acre
SIDEOATS GRAMA	El Reno	3.0
WESTERN WHEAT GRASS	Barton	2.3
SLENDER WHEAT GRASS	Native	2.0
LITTLE BLUESTEM	Pastura	2.0
SAND DROPSEED	Native	0.3
SWITCH GRASS	Nebraska 28	3.0
WEEPING LOVE GRASS	Morpha	1.0
		14.0 lbs

SEEDING APPLICATION: DRILL SEED 1/4" TO 1/2" INTO TOPSOIL. IN AREAS INACCESSIBLE TO A DRILL, HAND BROADCAST AT DOUBLE THE RATE AND RAKE 1/4" TO 1/2" INTO THE TOPSOIL. MULCHING APPLICATION: 1-1/2 TONS NATIVE HAY PER ACRE, MECHANICALLY CRIMPED INTO THE TOPSOIL.

NOTE:

CONTOURS SHOWN FOR MARKSHEFFEL ROAD ARE FROM ELPASO COUNTY DEPARTMENT OF PUBLIC SERVICES, HIGHWAY CONSTRUCTION PLANS OF PROPOSED MARKSHEFFEL ROAD.

SHADED AREA DENOTES PERMANENT EROSION BLANKET. CURLEX HEAVY DUTY EROSION CONTROL BLANKET BY AMERICAN EXCELSOR OR EQUAL SHALL BE USED.

LEGEND

- SILT FENCE
- VTC — VEHICLE TRACKING CONTROL
- TSD — TEMPORARY SLOPE DRAIN
- EROSION CONTROL BLANKET
- RCS — ROUGH-CUT STREET CONTROL
- CWA — CONCRETE WASHOUT AREA
- TSB — TEMPORARY SEDIMENT BASIN

SEE DETAILS SHEET RG-4

PROJECT SPECIFIC GRADING AND EROSION CONTROL NOTES

1. All earthwork required of this construction shall be completed in accordance with all applicable sections of the Project Specifications and Soil Investigation Report (Geotechnical Report).
2. Rubbish including timber, concrete rubble, trees, brush, and asphalt shall not be backfilled adjacent to any of the structures or be in the placement of any unclassified fill. The Contractor shall be responsible for the removal and hauling of such materials to a suitable spoil area. Costs associated with the removal of such materials shall be paid for as documented in the Project Specifications.
3. Excess excavation shall become the property of the Contractor and shall be disposed of at the Contractor's expense. The cost of haulage and spoiling of excess excavated materials shall be paid for as documented in the Project Specifications.
4. Water shall be used as a dust palliative as required and shall be included in the cost for earthwork item(s). No separate payment will be made for dust control associated with the site construction.
5. The road grades shall be cleared of vegetation and the spoil stockpiled for later use.
6. All grading shall be in conformance with the Geotechnical Report for the area.
7. Placement of fill for roadway embankments shall be completed in conformance with the Geotechnical Report.
8. Grading contours shown on this plan are to final grade.
9. Compaction under filled areas, including roadway and detention basin embankments, shall be 95 percent of the maximum Standard Proctor Density (ASTM D698) at two (2) percent of optimum moisture content.
10. No rubble or debris shall be placed in the backfill under any of the proposed buildings, streets, curb & gutter, sidewalk and drainage structures or within five (5) feet of a building footprint. Properly graded rubble may be used in some locations as specified and verified by the Geotechnical Engineer.
11. Contractor is responsible for reviewing the site prior to bidding to verify site conditions.
12. Contractor is responsible for providing erosion control measures as approved by the El Paso County DSD Engineering Division and as may be required by the El Paso County Inspector.
13. All slopes equal to or greater than 3:1 shall require anchored soil retention blanket (SRB), Geocoir 700 or equal
14. The Developer is responsible for maintaining erosion control measures until a mature stage of vegetation is established.
15. All soils used for fill must be approved by a representative of the Geotechnical Engineer.
16. All natural ground to receive fill must be properly scarified, watered and compacted prior to placing fill.
17. The Contractor is solely responsible for the design, maintenance and operation of any required dewatering system. The Contractor shall perform such independent investigation as he deems necessary to satisfy himself as to the subsurface groundwater conditions and unstable soil conditions to be encountered throughout the construction. Contractor shall coordinate the dewatering system with El Paso County when associated with public facilities.
18. No fill shall be placed, spread or rolled while it is frozen, thawing or during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until a representative of the Geotechnical Engineer indicates that the moisture content and density of the previously placed fill are as specified. Fill surfaces may be scarified and recompacted after rainfall if necessary, to obtain proper moisture density relation.
19. Additional erosion control structures and/or grading may be required at the time of construction.
20. Sediment removal for erosion control facilities shall be performed continuously for proper function.
21. Base mapping was provided by Pinnacle Land Surveying. The date of the last survey update was January 2014.
22. Proposed Construction Schedule:
    Begin Construction: Summer 2015
    End Construction: Autumn 2018
    Total Site Area = 245.4 Acres
23. Area to be disturbed = 172.8 Acres (est.).
    Existing 100-year runoff coefficient = 0.50
    Proposed 100-year runoff coefficient = 0.51
    Existing Hydrologic Soil Groups: B & C
    (B–Nelson-Tassel fine sandy loams; B–Stoneham sandy loam; C–Nunn clay loam)
24. Site is currently undeveloped and covered with native grasses on moderate to steep slopes (3%-18%).
25. Site is located in the West Fork Jimmy Camp Creek Drainage Basin.
26. No more than 25 acres is to be graded at a time. Disturbed area is to be reseeded and mulched prior to exposing additional area. The Contractor shall provide the County with a schedule of grading operation including phasing to adhere to the 25 acre requirement at the County Pre-Construction meeting.

Kiowa Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

WIDEFIELD
Investment Group

GLEN AT WIDEFIELD EAST
STORMWATER MANAGEMENT PLAN
SITE MAP
EL PASO COUNTY, COLORADO

Project No.:	14044
Date:	February 2016
Design:	AWMc
Drawn:	NRK
Check:	AWMc
Revisions:	

SHEET

FIGURE 2

Figures 2-5.dwg/Dec 02, 2015

Matchline See Figure 4

TEMPORARY SEDIMENT BASIN
(SEE FIGURE 5)
TSD=26 LF 18"
PIPE @ 25%
w/TYPE 'H' RIPRAP

TEMPORARY SEDIMENT BASIN B
(SEE FIGURE 5)
TSD=20 LF 24" PIPE @ 25%
w/TYPE 'H' RIPRAP

TEMPORARY
SEDIMENT BASIN D
(SEE FIGURE 5)
TSD=26 LF 24" PIPE @
25% w/TYPE 'H' RIPRAP

181.795 acres
7,918,075 s.f.

GAS LINE EASEMENT RECEPTION NO.

NOTE:
CONTOURS SHOWN FOR MARKSHEFFEL ROAD ARE FROM EL PASO COUNTY DEPARTMENT OF PUBLIC SERVICES, HIGHWAY CONSTRUCTION PLANS OF PROPOSED MARKSHEFFEL ROAD.

0 100' 200'
SCALE: 1" = 100'

LEGEND

- SILT FENCE
- VTC — VEHICLE TRACKING CONTROL
- TSD — TEMPORARY SLOPE DRAIN
- EROSION CONTROL BLANKET
- RCS — ROUGH-CUT STREET CONTROL
- CWA — CONCRETE WASHOUT AREA
- TSB — TEMPORARY SEDIMENT BASIN

SEE DETAILS SHEET RG-4

Matchline See Figure 2

Kiowa
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WIDEFIELD
Investment Group

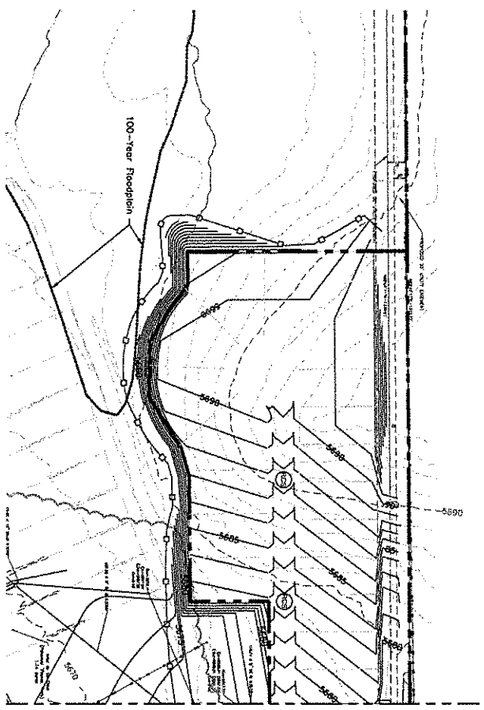
GLEN AT WIDEFIELD EAST
STORMWATER MANAGEMENT PLAN
SITE MAP
EL PASO COUNTY, COLORADO

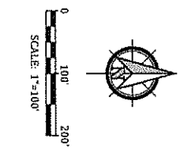
Project No.:	14044
Date:	February 2016
Design:	AWMc
Drawn:	NRK
Check:	AWMc
Revisions:	

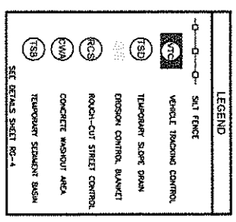
SHEET

FIGURE 3

Figure 3 - Dec 07, 2017







GLEN AT WIDEFIELD EAST
STORMWATER MANAGEMENT PLAN
SITE MAP
EL PASO COUNTY, COLORADO

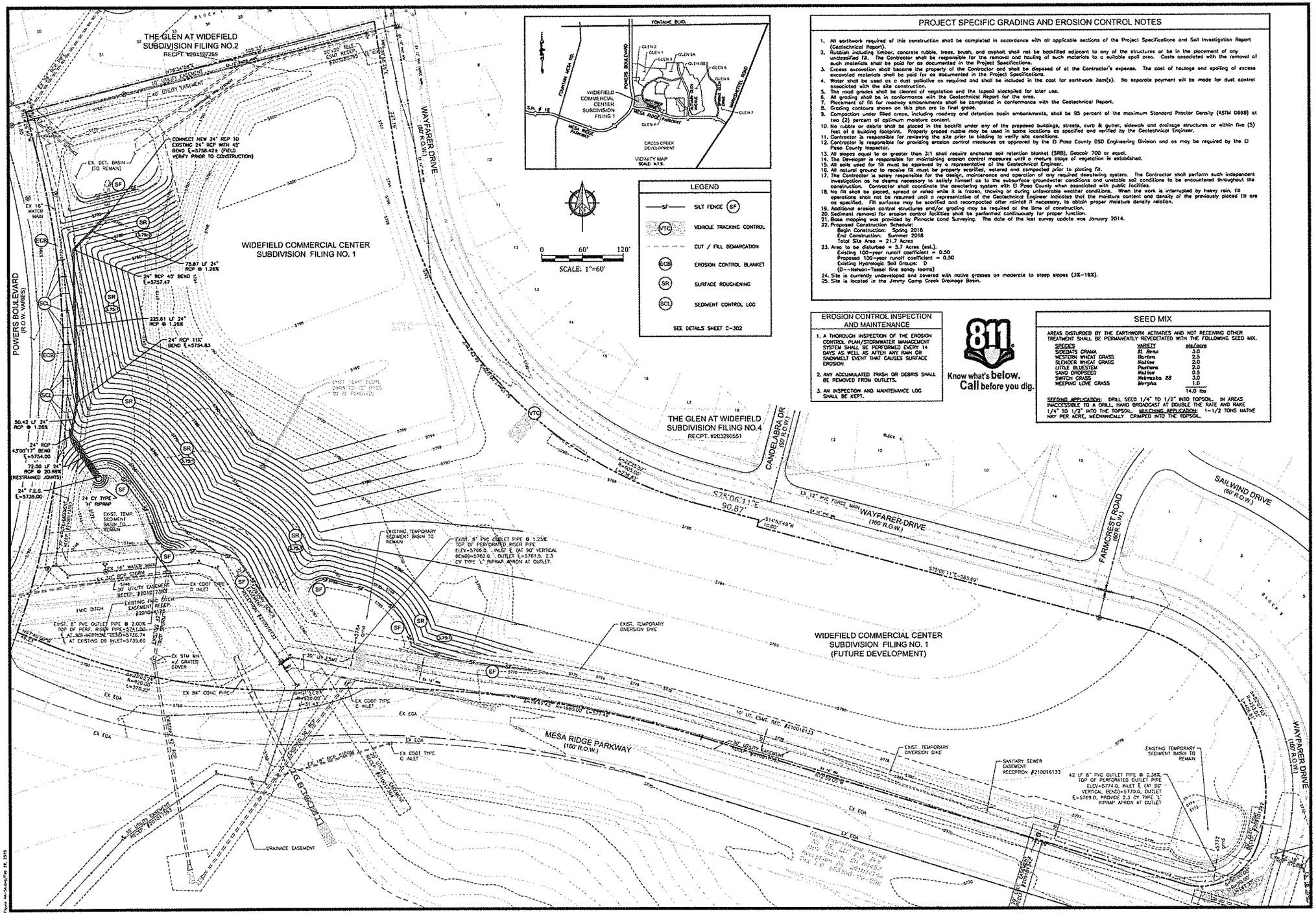
WIDEFIELD Investment Group

Kiowa Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

Project No.	14044
Date	February 2016
Designed	AHW
Drawn	MRK
Check	AHW
Revisions	

SHEET
FIGURE 4

figure 4 - map.dwg 02, 2017



PROJECT SPECIFIC GRADING AND EROSION CONTROL NOTES

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3. Excess excavation shall become the property of the Contractor and shall be disposed of at the Contractor's expense. The cost of haulage and spoiling of excess excavated materials shall be paid for as documented in the Project Specifications.
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5. The road grades shall be cleared of vegetation and the topsoil stockpiled for later use.
6. All grading shall be in conformance with the Geotechnical Report for the area.
7. Placement of fill for roadway embankments shall be completed in conformance with the Geotechnical Report.
8. Grading contours shown on this plan are to final grade.
9. Compaction under fixed areas, including roadway and detention basin embankments, shall be 95 percent of the maximum Standard Proctor Density (ASTM D698) at two (2) percent of optimum moisture content.
10. No rubble or debris shall be placed in the backfill under any of the proposed buildings, streets, curb & gutter, sidewalk and drainage structures or within five (5) feet of a building footprint. Properly graded rubble may be used in some locations as specified and verified by the Geotechnical Engineer.
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19. Additional erosion control structures and/or grading may be required at the time of construction.
20. Sediment removal for erosion control facilities shall be performed continuously for proper function.
21. Base mapping was provided by Pinnacle Land Surveying. The date of the last survey update was January 2014.
22. Proposed Construction Schedule:
    Begin Construction: Spring 2018
    End Construction: Summer 2018
    Total Site Area = 21.7 Acres
23. Area to be disturbed = 5.7 Acres (est.).
    Existing 100-year runoff coefficient = 0.50
    Proposed 100-year runoff coefficient = 0.50
    Existing Hydrologic Soil Groups: D
    (0--Nelson-Tassel fine sandy loams)
24. Site is currently undeveloped and covered with native grasses on moderate to steep slopes (3%-18%).
25. Site is located in the Jimmy Camp Creek Drainage Basin.

EROSION CONTROL INSPECTION AND MAINTENANCE

1. A THOROUGH INSPECTION OF THE EROSION CONTROL PLAN/STORMWATER MANAGEMENT SYSTEM SHALL BE PERFORMED EVERY 14 DAYS AS WELL AS AFTER ANY RAIN OR SNOWMELT EVENT THAT CAUSES SURFACE EROSION
2. ANY ACCUMULATED TRASH OR DEBRIS SHALL BE REMOVED FROM OUTLETS.
3. AN INSPECTION AND MAINTENANCE LOG SHALL BE KEPT.

811 Know what's below. Call before you dig.

SEED MIX

AREAS DISTURBED BY THE EARTHWORK ACTIVITIES AND NOT RECEIVING OTHER TREATMENT SHALL BE PERMANENTLY REVEGETATED WITH THE FOLLOWING SEED MIX.

SPECIES	VARIETY	lbs/acre
SIDEOATS GRAMA	El Reno	3.0
WESTERN WHEAT GRASS	Barton	2.5
SLENDER WHEAT GRASS	Native	2.0
LITTLE BLUESTEM	Pastura	2.0
SAND DROPSEED	Native	0.5
SWITCH GRASS	Nebraska 28	3.0
WEEPING LOVE GRASS	Morpha	1.0
		14.0 lbs

SEEDING APPLICATION: DRILL SEED 1/4" TO 1/2" INTO TOPSOIL. IN AREAS INACCESSIBLE TO A DRILL, HAND BROADCAST AT DOUBLE THE RATE AND RAKE 1/4" TO 1/2" INTO THE TOPSOIL. MULCHING APPLICATION: 1-1/2 TONS NATIVE HAY PER ACRE, MECHANICALLY CRIMPED INTO THE TOPSOIL.

Kiowa Engineering Corporation
Collaborating for success
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

WIDEFIELD COMMERCIAL CENTER SUBDIVISION FIL. NO. 1
STORMWATER MANAGEMENT PLAN
SITE MAP
EL PASO COUNTY, COLORADO

Project No.:	17044
Date:	February 28, 2018
Design:	NRK
Drawn:	CAD
Check:	AWMc
Revisions:	

FIGURE 4A

APPENDIX 5

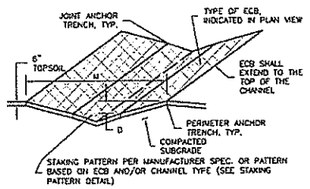
Details of Construction BMPs

Figures 5 and 5A

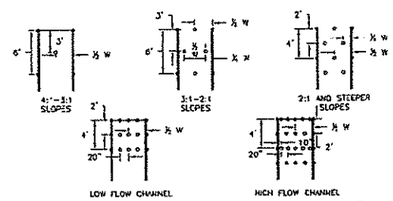
C302 Widefield Commercial Early Grading

TABLE ECB-1. ECB MATERIAL SPECIFICATIONS				
TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING**
STRAW*	-	100%	-	DOUBLE/ NATURAL
STRAW-COCONUT	30% MIN	70% MAX	-	DOUBLE/ NATURAL
COCONUT	100%	-	-	DOUBLE/ NATURAL
EXCELSIOR	-	-	100%	DOUBLE/ NATURAL

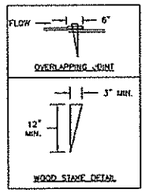
*STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNEL.

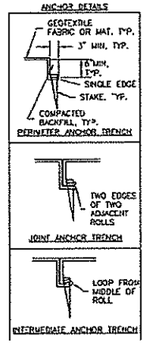


ECB-2. SMALL DITCH OR DRAINAGEWAY



STAKING PATTERNS BY SLOPE OR CHANNEL TYPE





EROSION CONTROL BLANKET (ECB)
NTS

EROSION CONTROL BLANKET INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   -LOCATION OF ECB.
   -TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, OR EXCELSIOR).
   -AREA, A, IN SQUARE YARDS OF EACH TYPE OF ECB.

2. 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR ECBs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.

3. IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.

4. PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.

5. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.

6. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.

7. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.

8. MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.

9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBS SHALL BE RESEEDED AND MULCHED.

EROSION CONTROL BLANKET MAINTENANCE NOTES

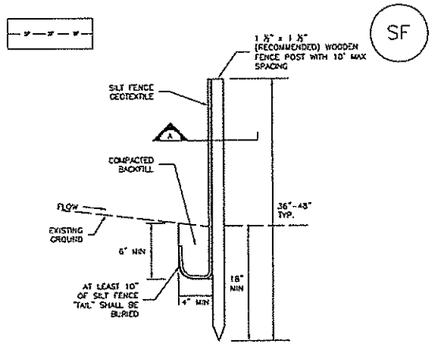
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

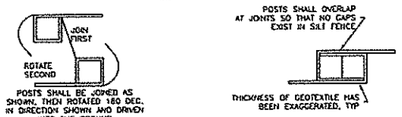
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.

5. ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.



SILT FENCE



SECTION A

SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.

2. A UNIFORM 8" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.

3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY HAND. ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.

4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.

5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY CUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.

6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".

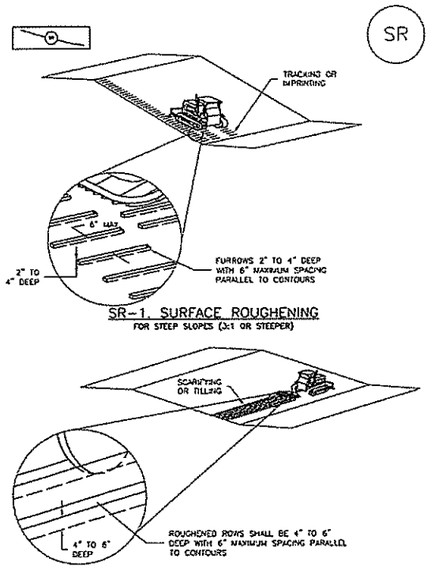
5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.

6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.

7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

SILT FENCE (SF)
NTS

NOTES:
1. All temporary and permanent stormwater BMP's shall conform to the Urban Drainage and Flood Control District, Urban Storm Drainage Criteria Manual, Volume 3.
2. Other BMP's (not shown) may be required for this project. The use of other BMP's shall be coordinated with the County Inspector.



SR-1. SURFACE ROUGHENING
FOR STEEP SLOPES (3:1 OR STEEPER)

4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE
BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCH

5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING
OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED
DOWN THE STAKE.

6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE
TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK."
EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFIC
RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPIC

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING

SILT FENCE MAINTENANCE NOTES

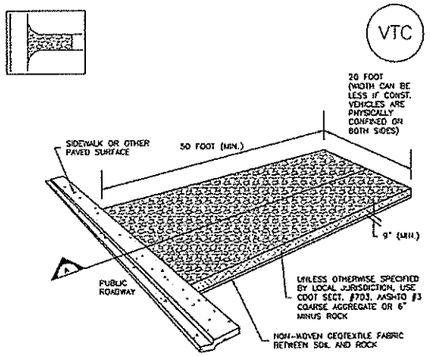
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE
MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPE
POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THA
EROSION, AND PERFORM NECESSARY MAINTENANCE.

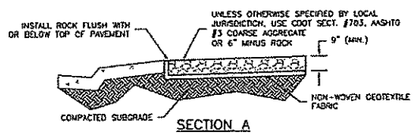
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO I
EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEA
DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE
DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE
TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPT
SEDIMENTS IS APPROXIMATELY 6".

SURFACE ROUGHENING (VTC)
NTS





SECTION A

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   -LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
   -TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).

2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.

3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.

4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.

6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.

5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

VEHICLE TRACKING CONTROL (VTC)
NTS

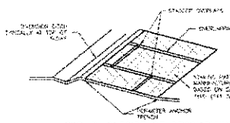
Kiowa Engineering Corporation
Celebrating 30 years
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

WIDEFIELD COMMERCIAL CENTER SUBDIVISION FIL. NO. 1
INITIAL OVERLOT GRADING PLAN
DETAIL SHEET
EL PASO COUNTY, COLORADO

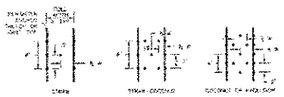
Project No:	17044
Date:	May 10, 2018
Design:	NRK
Drawn:	CAD
Check:	AWMc
Revisions:	

SHEET
C-302
2 of 2 Sheets

STAKING PATTERNS BY SLOPE



ECB-3, OUTSIDE OF DRAINAGEWAY



STAKING PATTERNS BY ECB TYPE

TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING
STRAW	-	100%	-	DOUBLE NETTING
STRAW / COCONUT	30% MIN.	REMAINDER	-	DOUBLE NETTING
COCONUT	100%	-	-	DOUBLE NETTING
EXCELSIOR	-	-	100%	DOUBLE NETTING

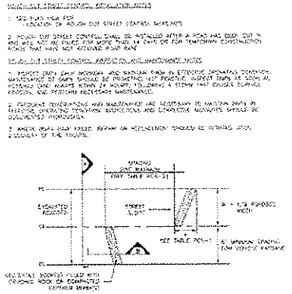
EROSION CONTROL BLANKET NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF ECB
   - TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, OR EXCELSIOR)
   - AREA IN SQUARE YARDS OF EACH TYPE OF ECB
2. ALL NATURAL AND ANTHROPOGENIC MATERIALS ANY OBSTRUCTION FOR EFFECTIVE ACTIVATION SOME OVERSTRETCHING MAY ALLOW CLOSER MATERIALS TO MAKE APPROPRIATE
3. E.C. LINER WHERE ECB'S ARE SHOWN ON THE PLANS, THE PERFORATED SHALL PLACE, GRADED, AND ACCEPTABLE FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING SURFACES SHALL BE SMOOTH AND FREE FROM ROCKS OR OTHER OBSTRUCTIONS AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
4. REINFORCED MATERIAL THROUGH SHALL BE NEED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
5. JOINT AND LAP THROUGH SHALL BE USED TO JOIN ROLLS OF ECB'S TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECB'S EXCEPT STRAW WHERE MAY USE AN INTERLOCKING JOINT.
6. INTERMEDIATE ANCHOR THROUGH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR EXCELSIOR AND EXPLOSION ECB'S.
7. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECB'S TOGETHER FOR ECB'S ON SLOPES.
8. MATERIAL SPECIFICATIONS OF ECB'S SHALL CONFORM TO TABLE ECB-1.
9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECB'S SHALL BE RESEEDED AND MULCHED.

EROSION CONTROL BLANKET MAINTENANCE NOTES

1. INSPECT EACH EARLY MORNING AND MAINTAIN SHALL BE EFFECTIVE OPERATING CONDITION. MAINTENANCE OF RAPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT RAPS AS SOON AS POSSIBLE AND ALWAYS WITHIN 24 HOURS FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. PERFORM SURFACE WORK AND MAINTENANCE ARE NECESSARY TO MAINTAIN RAPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE UNDERTAKEN PERIODICALLY.
3. REPAIR RAPS WHICH FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATION IN RAPS SHALL BE REMOVED AS NEEDED TO MAINTAIN RAP EFFECTIVENESS, EXCAVATE WHEN SEDIMENT DEPTH REACHES ONE HALF THE ECB THICKNESS (HALF THE ECB'S INITIAL DEPTH).
5. REMOVE RAPS AND TO REMOVE IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND CHANGE ESCAPE IS ACCEPTED BY EPC LOCAL JURISDICTION.
6. WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

EROSION CONTROL BLANKET (ECB)
NTS



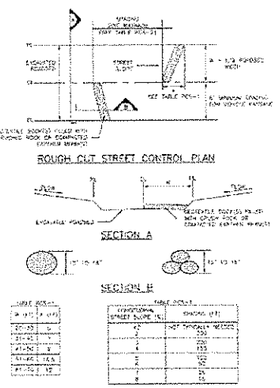
ROUGH-CUT STREET CONTROL PLAN

ROUGH-CUT STREET CONTROL INSTALLATION NOTES

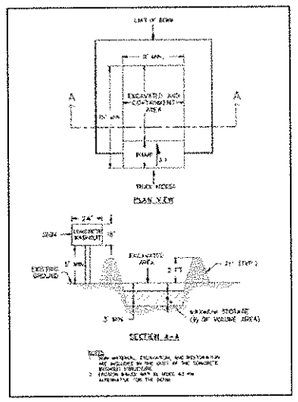
1. SEE PLAN VIEW FOR:
   - LOCATION OF ROUGH-CUT STREET CONTROL DEVICES
2. ROUGH-CUT STREET CONTROL SHALL BE INSTALLED AFTER A ROAD HAS BEEN CUT TO RAW GRADE, BUT BEFORE CONSTRUCTION MATERIALS OR EQUIPMENT ARE ON SITE FOR TEMPORARY CONSTRUCTION ACCESS THAT HAVE NOT ACCURATE ROUGH PLAN.

ROUGH-CUT STREET CONTROL INSPECTION AND MAINTENANCE NOTES

1. INSPECT EARLY EACH MORNING AND MAINTAIN SHALL BE EFFECTIVE OPERATING CONDITION. MAINTENANCE OF RAPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT RAPS AS SOON AS POSSIBLE AND ALWAYS WITHIN 24 HOURS FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. PERFORM SURFACE WORK AND MAINTENANCE ARE NECESSARY TO MAINTAIN RAPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE UNDERTAKEN PERIODICALLY.
3. WHERE RAPS FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATION IN RAPS SHALL BE REMOVED AS NEEDED TO MAINTAIN RAP EFFECTIVENESS. EXCAVATE WHEN SEDIMENT DEPTH REACHES ONE HALF THE ECB'S INITIAL DEPTH (HALF THE ECB THICKNESS).
5. REMOVE RAPS AND TO REMOVE IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND CHANGE ESCAPE IS ACCEPTED BY EPC LOCAL JURISDICTION.
6. WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.



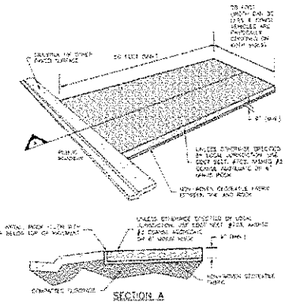
ROUGH-CUT STREET CONTROL (RCS)
NTS



CONCRETE WASHOUT AREA (CWA)
EPC STD SD_3-84 NTS

NOTE:

OTHER BMP's (DETAILS NOT SHOWN HEREON) MAY BE REQUIRED FOR THIS PROJECT. ANY CHANGES SHALL BE COORDINATED WITH EL PASO COUNTY ENGINEERING DIVISION INSPECTIONS, AND SHALL BE REFLECTED IN THIS SWMP.



SECTION A

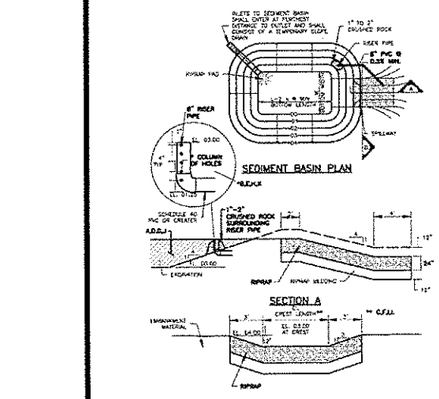
VEHICLE TRACKING CONTROL (VTC)
NTS

STANDARD CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

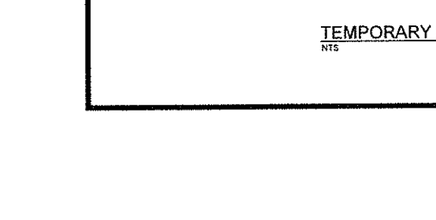
1. SEE PLAN VIEW FOR:
   - LOCATION OF CONSTRUCTION ENTRANCE(S) OR EXIT(S)
   - TYPE OF CONSTRUCTION ENTRANCE/EXIT(STABILIZED AGGREGATE, MATS, CONSTRUCTION OF TRAP)
2. CONSTRUCTION MAT OR TEMPORARY CONSTRUCTION ENTRANCES ARE SUITE TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY PROJECTS LESS A WEEK TO A MONTH) WHERE THE MAIN SITE ENTRANCE WILL BE USED THROUGHOUT PROJECT.
3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED ROAD OR ALLEYS.
4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBANCE ACTIVITIES.
5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STONE PER CONSTRUCTION ENTRANCE/EXIT AREAS TO THE PLACEMENT OF STONE.
6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, STONE SHALL CONSIST OF 3/4" TO 2" CRUSHED AGGREGATE OR 6" SMOOTH ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

1. INSPECT PAPA EACH MORNING AND MAINTAIN SHALL BE EFFECTIVE OPERATING FACILITIES MAINTENANCE OF RAPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT RAPS AS SOON AS POSSIBLE AND ALWAYS WITHIN 24 HOURS FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. PERFORM SURFACE WORK AND MAINTENANCE ARE NECESSARY TO MAINTAIN RAPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE UNDERTAKEN THOROUGHLY.
3. WHERE RAPS FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UNDERNEATH OF THE SITE FENCE SHALL BE REMOVED AT POINTS TO MAINTAIN THE FUNCTIONALITY OF THE BMP. GENERALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".
5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR SUCH AS SAGGING, TEARING, OR COLLAPSE.
6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREAS HAVE BEEN STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR AS DIRECTED BY AN ESC/PROJECT ENGINEER SEDIMENT CONTROL BMP.
7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.



SEDIMENT BASIN PLAN



SECTION A

TEMPORARY SEDIMENT BASIN "A"

A. 0.38 ac-ft REQUIRED TO SPILLWAY CREST.

B. 6" PVC PERFORATED RISER PIPE, PERFORATIONS VERTICALLY SPACED 4" APART, 1 COLUMN OF 5 7/8" ø HOLES.

C. 6' LONG SPILLWAY, 1' DEPTH, LINED WITH 24" THICK TYPE "M" RIPRAP TO TOE OF SLOPE.

TEMPORARY SEDIMENT BASIN "B"

D. 2.62 ac-ft REQUIRED TO SPILLWAY CREST.

E. 6" PVC PERFORATED RISER PIPE, PERFORATIONS VERTICALLY SPACED 4" APART, 1 COLUMN OF 5 7/8" ø HOLES.

F. 28' LONG SPILLWAY, 1' DEPTH, LINED WITH 24" THICK TYPE "M" RIPRAP TO TOE OF SLOPE.

TEMPORARY SEDIMENT BASIN "C"

G. 4.32 ac-ft REQUIRED TO SPILLWAY CREST.

H. 8" PVC PERFORATED ROCK PIPE, PERFORATIONS VERTICALLY SPACED 4" APART, 3 COLUMNS OF 7/8" DIA. HOLES.

I. 40' LONG SPILLWAY, 2' DEPTH, LINED WITH 24" THICK TYPE "M" RIPRAP TO TOE OF SLOPE.

TEMPORARY SEDIMENT BASIN "D"

J. 5.12 ac-ft REQUIRED TO SPILLWAY CREST.

K. 8" PVC PERFORATED RISER PIPE, PERFORATIONS VERTICALLY SPACED 4" APART, 3 COLUMNS OF 7/8" DIA. HOLES.

L. 45' LONG SPILLWAY, 1' DEPTH, LINED WITH 24" THICK TYPE "M" RIPRAP TO TOE OF SLOPE.

SEDIMENT BASIN INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF SEDIMENT BASIN
   - TYPE OF BASIN (STRAIGHT, SLEEK OR NONSTRAIGHT BASIN)
   - PIPE STANDPIPE BASIN BOTTOM WIDTH, SIDE SLOPES, LENGTH, AND HOLE DIAMETER, ETC.
   - WHEN SEDIMENTARY WORK HAS BEEN PERFORMED (MARKED FOR REMOVAL OF WORK), THICKENING FIVE (5) HEIGHT (1 NUMBER OF EQUIPMENT) TO HOLE DIAMETER NO AND FIVE DIAMETER 4.
2. TOP STANDPIPE BASIN WATER DIMENSION MAY BE REQUIRED AS LONG AS BOTTOM WIDTH IS NOT REDUCED.
3. SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT WOULD DRAIN INTO AND BE AS A SEDIMENTATION CONTROL.
4. ENVIRONMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE LARGER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT THAT WILL PASS NO. 200 SIEVE.
5. ENVIRONMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
6. PIPE SHALL BE OF STEEL OR SHALL BE USED.
7. THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 10 ACRES. EPC ENGINEERING DIVISION TO APPROVE ALL ENGINEERING DESIGNS FOR DRAINAGE AREAS EXCEEDING 10 ACRES. ENGINEERING DETAILS FOR ANY SEDIMENT BASINS THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 10 ACRES.

SEDIMENT BASIN MAINTENANCE NOTES

1. INSPECT BASIN EACH MORNING AND MAINTAIN SHALL BE EFFECTIVE OPERATING CONDITION. MAINTENANCE OF RAPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT RAPS AS SOON AS POSSIBLE AND ALWAYS WITHIN 24 HOURS FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. PERFORM SURFACE WORK AND MAINTENANCE ARE NECESSARY TO MAINTAIN RAPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE UNDERTAKEN PERIODICALLY.
3. WHERE RAPS FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED IN RAPS SHALL BE REMOVED AS NEEDED TO MAINTAIN RAP EFFECTIVENESS. EXCAVATE WHEN SEDIMENT DEPTH REACHES ONE HALF THE ECB'S INITIAL DEPTH (HALF THE ECB THICKNESS).
5. REMOVE RAPS AND TO REMOVE IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND CHANGE ESCAPE IS ACCEPTED BY EPC LOCAL JURISDICTION.
6. WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

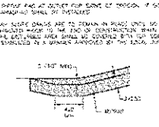
TEMPORARY SEDIMENT BASIN (TSB)
NTS

SLOPE DRAIN INSTALLATION NOTES

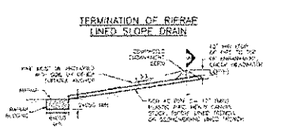
1. SEE PLAN VIEW FOR:
   - LOCATION AND LENGTH OF SLOPE DRAIN
   - RIPRAP DIMENSION, D1 AND RIPRAP SIZE, D50
2. SLOPE DRAIN SHALL BE DESIGNED TO CONVEY PEAK RUNOFF FOR 2-YEAR 24-HOUR STORM AT A MINIMUM. FOR LONGER DURATION PROJECTS, LARGER SIZE MAY BE APPROPRIATE.
3. SLOPE DRAIN EFFECTIVELY SHALL BE CONSTRUCTED WITHOUT DISTRIBUTION, CONSTRUCTION MAY EXIST TO INTERIM LANDSCAPE FACILITIES.
4. SLOPE DRAINS INCLUDED SHALL BE INSTALLED PRIOR TO ASSOCIATED LAND-DISTURBING ACTIVITIES.
5. CHECK HYDROMETER ZONING FOR TEMPORARY AND PERMANENT SLOPE DRAIN ENTRIES. SHOW MINIMUM COVER PACKAGE AS NECESSARY FOR EFFECTIVE HYDROMETER DEPTH.
6. RIPRAP PAD SHALL BE PLACED AT SLOPE DRAIN OUTFALL.
7. ANCHOR PIPE BY COVERING WITH SOIL OR BY AN APPROPRIATE OUTSIDE ANCHOR MATERIAL.

SLOPE DRAIN MAINTENANCE NOTES

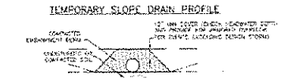
1. INSPECT DRAIN EACH MORNING AND MAINTAIN SHALL BE EFFECTIVE OPERATING CONDITION. MAINTENANCE OF RAPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT RAPS AS SOON AS POSSIBLE AND ALWAYS WITHIN 24 HOURS FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. PERFORM SURFACE WORK AND MAINTENANCE ARE NECESSARY TO MAINTAIN RAPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE UNDERTAKEN PERIODICALLY.
3. WHERE RAPS FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED IN RAPS SHALL BE REMOVED AS NEEDED TO MAINTAIN RAP EFFECTIVENESS. EXCAVATE WHEN SEDIMENT DEPTH REACHES ONE HALF THE ECB'S INITIAL DEPTH (HALF THE ECB THICKNESS).
5. REMOVE RAPS AND TO REMOVE IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND CHANGE ESCAPE IS ACCEPTED BY EPC LOCAL JURISDICTION.
6. WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.



TERMINATION OF RIPRAP LINED SLOPE DRAIN



TEMPORARY SLOPE DRAIN PROFILE



SECTION A

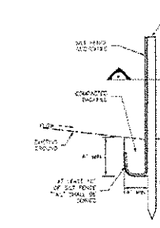
TEMPORARY SLOPE DRAIN (TSD)
NTS

SILT FENCE INSTALLATION NOTES

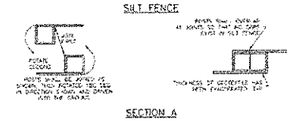
1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SET BACK AT THE TOE OF A SLOPE SHOULD BE INSTALLED AT A FLAT LOCATION AT LEAST SEVERAL FEET (1.5 M) FROM THE TOE OF THE SLOPE TO ALLOW FLOW FOR PONDING AND DEPOSITION.
2. A DIVERSION BY A 4" ANCHOR TRENCH SHALL BE EXCAVATED WORK DOWNHILL OF SILT FENCE AND ALIGNED SHARES TO ROAD GRADES, SHOULDER, OR SIMILAR EQUIPMENT SHALL BE USED.
3. COMPACT MACHINE TRENCH BY HAND WITH A TAMPING LOOK OR BY WHEEL ROLLING COMPACTION SHALL BE SUCH THAT NOT PASS ENTIRE BEING PLACED OUT OR ANCHOR BEFORE BY HAND.
4. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
5. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE EXTENDED APPROXIMATELY THE DISTANCE AS SHOWN IN THE DETAIL TO PREVENT CONCENTRATED FLOW AROUND THE ENDS. THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO NOT EXCEED FLOW VELOCITIES ALONG THE BMP AND THE SILT FENCE (TYPICALLY 1/2 TO 1 ACRE).
6. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. INSPECT BMPS EACH MORNING AND MAINTAIN SHALL BE EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPS SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPS AS SOON AS POSSIBLE AND ALWAYS WITHIN 24 HOURS FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. PERFORM SURFACE WORK AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPS IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE UNDERTAKEN PERIODICALLY.
3. WHERE BMPS FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UNDERNEATH OF THE SILT FENCE SHALL BE REMOVED AT POINTS TO MAINTAIN THE FUNCTIONALITY OF THE BMP. GENERALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".
5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR SUCH AS SAGGING, TEARING, OR COLLAPSE.
6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREAS HAVE BEEN STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR AS DIRECTED BY AN ESC/PROJECT ENGINEER SEDIMENT CONTROL BMP.
7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.



SILT FENCE



SECTION A

SILT FENCE DETAIL
NTS

STANDARD EPC GRADING AND EROSION CONTROL NOTES

1. Construction may not commence until a Construction Permit is obtained from Development Services and a Preconstruction Conference is held with Development Services Inspectors.
2. Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off site waters, including wetlands.
3. Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations to regulations and standards must be requested, and approved in writing.
4. A separate Stormwater Management Plan (SWMP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. During construction the SWMP is the responsibility of the designated Stormwater Manager. The SWMP shall be located on site at all times and shall be kept up to date with work progress and changes in the field.
5. Once the ESQCP has been issued, the contractor may install the initial stage erosion and sediment control BMP's as indicated on the GEC. A preconstruction meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County DSD inspections staff.
6. Soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within 21 calendar days after final grading, or earth disturbance, has been completed. Disturbed areas and stockpiles, which are not at final grade but will remain dormant for longer than 30 days, shall also be mulched within 21 days after interim grading. And area that is going to remain an interim for more than 60 days shall also be seeded. All temporary soil erosion control measures and BMP's shall be maintained until permanent soil erosion control measures are implemented and established.
7. Temporary soil erosion control facilities shall be removed and earth disturbance areas graded and stabilized with permanent soil erosion control measures pursuant to standards and specification prescribed in the DCM Volume II and the Engineering Criteria Manual (ECM) appendix I.
8. All persons engaged wit hearth disturbance shall implement and maintain acceptable soil erosion and sediment control measures including BMP's in conformance with the erosion control technical standards of the Drainage Criteria Manual (DCM) Volume II and in accordance with the Stormwater Management Plan (SWMP).
9. All temporary erosion control facilities including BMPs and all permanent facilities intended to control erosion of any earth disturbance operations shall be installed as defined in the approved plans, the SWMP and the DCM Volume II and maintained throughout the duration of the earth disturbance operation.
10. Any earth disturbance shall be conducted in such a manner so as to effectively reduce accelerated soil erosion and resulting sedimentation. All disturbances shall be designed, constructed, and completed so that the exposed area of any disturbed land shall be limited to the shortest practical period of time.
11. Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be designed to limit the discharge to a non-erosive velocity.
12. Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to runoff to State Waters, including any surface or subsurface storm drainage system or facilities.
13. Erosion control blanketing is to be used on slopes steeper than 3:1.
14. Building, construction, excavation, or other waste materials shall not be temporarily placed or stored in the street, alley, or other public way, unless in accordance with an approved Traffic Control Plan. BMPs may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances.
15. Vehicle tracking of soils and construction debris off-site shall be minimized. Materials tracked offsite shall be cleaned up and properly disposed of immediately.
16. Contractor shall be responsible for the removal of all wastes from the construction site for disposal in accordance with local and State regulatory requirements. No construction debris, tree slash, building material wastes or unused building materials shall be buried, dumped, or discharged at the site.
17. The owner, site developer, contractor, and/or their authorized agents shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, and sand that may accumulate in the storm sewer or other drainage conveyance and stormwater appurtenances as a result of site development.
18. The quantity of materials stored on the project site shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with original manufacturer's labels.
19. No chemicals are to be used by the contractor, which have the potential to be released in stormwater unless permission for the use of a specific chemical is granted in writing by the ECM Administrator. In granting the use of such chemicals, special conditions and monitoring may be required.
20. Bulk storage structures for petroleum products and other chemicals shall have adequate protection so as to contain all spills and prevent any spilled material from entering State Waters, including any surface or subsurface storm drainage system or facilities.
21. No person shall cause the impediment of stormwater flow in the flow line of the curb and gutter or in the ditch/swale.
22. Individuals shall comply with the "Colorado Water Quality Control Act" (Title 25, Article8, CRS), and the Clean Water Act" (33 USC 1344), in addition to the requirements included in the DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the Contractor prior to the construction (NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and laws, rules, or regulations of other Federal, State, or County Agencies, the more restrictive laws, rules, or regulations shall apply.
23. All construction traffic must enter/exit the site at approved construction access points.
24. Prior to actual construction the permittee shall verify the location of existing utilities.
25. A water source shall be available on site during earthwork operations and utilized as required to minimize dust from earthwork equipment and wind.
26. The soils report for this site entitled *Subsurface Soil Investigation The Glen at Widefield, Filing #6, Widefield, Colorado* has been prepared by Soil Testing and Engineering, Inc. and shall be considered a part of these plans.
27. At least ten days prior to the anticipated start of construction, for projects that will disturb 1 acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SWMP), of which this grading and erosion control plan may be a part. For information or application materials contact:
    Colorado Department of Public Health and Environment
    Water Quality Control Division
    WQCD - Permits
    4300 Cherry Creek Drive South
    Denver, Colorado 80246-1530
    Attn: Permits Unit

Kiowa Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 635-7342

WIDEFIELD
Investment Group

GLEN AT WIDEFIELD EAST
STORMWATER MANAGEMENT PLAN
BEST MANAGEMENT PRACTICES (BMP's)
EL PASO COUNTY, COLORADO

Project No.:	14044
Date:	February 2016
Design:	AWMc
Drawn:	NRK
Check:	AWMc
Revisions:	

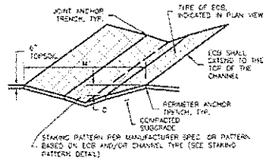
SHEET

FIGURE 5

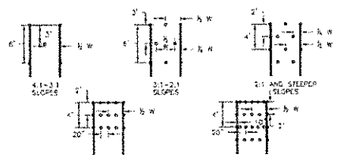
Figure 2-5.dwg/Dec 07, 2017

TABLE ECB-1: ECB MATERIAL SPECIFICATIONS				
TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING
STRAW*	-	100%		DOUBLE/ NATURAL
STRAW-COCONUT	30% MIN	70% MAX	-	DOUBLE/ NATURAL
COCONUT	100%	-	-	DOUBLE/ NATURAL
EXCELSIOR	-	-	100%	DOUBLE/ NATURAL

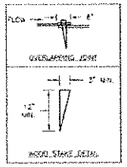
*STRAW FIBER MAY ONLY BE USED OUTSIDE OF SWMP AND DRAINAGE CHANNELS.

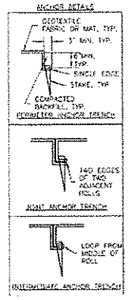


ECB-2, SMALL DITCH OR DRAINAGEWAY



STAKING PATTERNS BY SLOPE OR CHANNEL TYPE





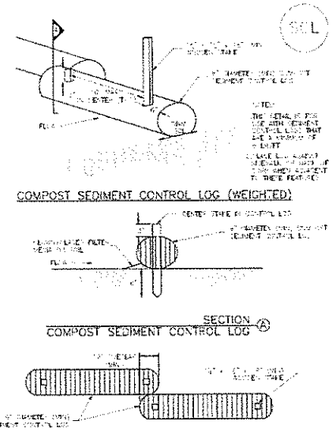
EROSION CONTROL BLANKET INSTALLATION NOTES

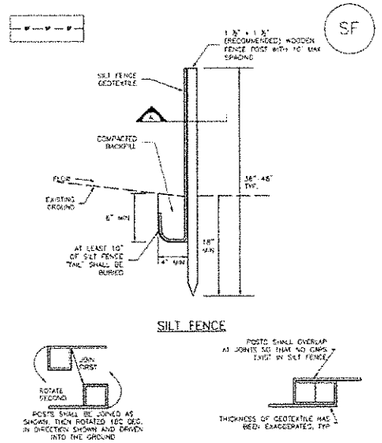
1. SEE PLAN VIEW FOR:
   - LOCATION OF ECB
   - TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, OR EXCELSIOR)
   - AREA A, IN SQUARE YARDS OF EACH TYPE OF ECB
2. 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPS, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.
3. IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
4. PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
5. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.
6. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.
7. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
8. MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBS SHALL BE RESEEDED AND MULCHED.

EROSION CONTROL BLANKET MAINTENANCE NOTES

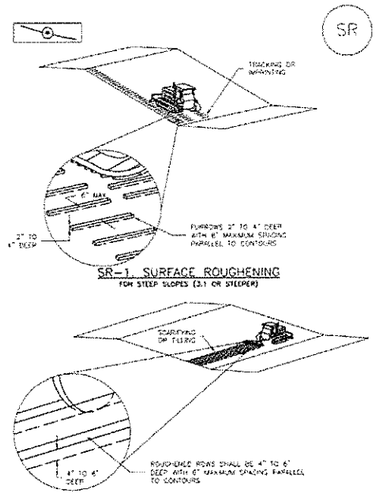
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
5. ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.

EROSION CONTROL BLANKET (ECB)
NTS

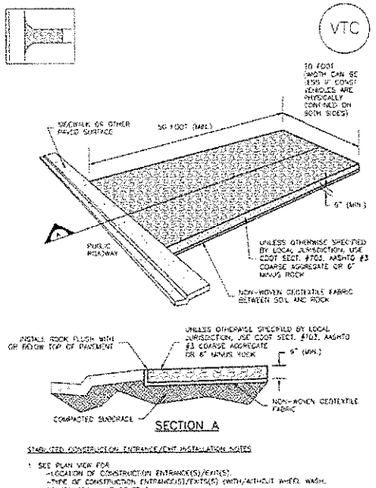




NOTES:
1. All temporary and permanent stormwater BMP's shall conform to the Urban Drainage and Flood Control District, Urban Storm Drainage Criteria Manual, Volume 3.
2. Other BMP's (not shown) may be required for this project. The use of other BMP's shall be coordinated with the County Inspector.



SR-1, SURFACE ROUGHENING
FOR STEEP SLOPES (3:1 OR STEEPER)



SEDIMENT CONTROL LOG INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATION AND LENGTH OF SEDIMENT CONTROL LOGS.
2. SEDIMENT CONTROL LOGS THAT ACT AS A PERIMETER CONTROL SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.
3. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE OF ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
4. SEDIMENT CONTROL LOGS MAY BE USED AS SMALL CHECK DAMS IN DITCHES AND SWALES. HOWEVER, THEY SHOULD NOT BE USED IN PERENNIAL STREAMS.
5. IT IS RECOMMENDED THAT SEDIMENT CONTROL LOGS BE TRENCHED INTO THE GROUND TO A DEPTH OF APPROXIMATELY ¼ OF THE DIAMETER OF THE LOG. IF TRENCHING TO THIS DEPTH IS NOT FEASIBLE AND/OR DESIRABLE (SHORT TERM INSTALLATION WITH DESIRE NOT TO DAMAGE LANDSCAPING) A LESSER TRENCHING DEPTH MAY BE ACCEPTABLE WITH MORE ROBUST STAKING. COMPOST LOGS THAT ARE 9 INCHES OR NOT NEED TO BE TRENCHED.
6. THE UPHILL SIDE OF THE SEDIMENT CONTROL LOG SHALL BE BACKFILLED WITH SOIL OR FILTER MATERIAL THAT IS FREE OF ROCKS AND DEBRIS. THE SOIL SHALL BE TIGHTLY COMPACTED INTO THE SHAPE OF A RIGHT TRIANGLE USING A SHOVEL OR WEIGHTED LAWN ROLLER OR ROLLED IN PLACE.
7. FOLLOW MANUFACTURER'S GUIDANCE FOR STAKING. IF MANUFACTURERS' INSTRUCTIONS DO NOT SPECIFY STAKING, STAKES SHALL BE PLACED ON 4' CENTERS AND EMBEDDED A MINIMUM OF 4" INTO THE GROUND. 3" OF THE STAKE SHALL PROTRUDE FROM THE TOP OF THE LOG. STAKES THAT ARE BROKEN PRIOR TO INSTALLATION SHALL BE REPLACED. COMPOST LOGS SHALL BE STAKED TO ON CENTER.

SEDIMENT CONTROL LOG MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOG SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY ½ OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
5. SEDIMENT CONTROL LOG SHALL BE REMOVED AT THE END OF CONSTRUCTION. COMPOST FROM COMPOST LOGS MAY BE LEFT IN PLACE AS LONG AS BMPS ARE REMOVED AND THE AREA SEEDED. IF DISTURBED AREAS EXIST AFTER REMOVAL, THEY SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

COMPOST SEDIMENT CONTROL LOG (SCL)
NTS

SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHALL BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
2. A TRENCH 8" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO HOE CHADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.
3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.
6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK". THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' – 20').
7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

SILT FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, ESPECIALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".
5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
7. WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

SILT FENCE (SF)
NTS

SURFACE ROUGHENING INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   - LOCATION(S) OF SURFACE ROUGHENING
2. SURFACE ROUGHENING SHALL BE PROVIDED IMMEDIATELY AFTER COMPLETION OF FINISHED GRADING (FOR AREAS NOT RECEIVING TOPSOIL) OR PRIOR TO TOPSOIL PLACEMENT OR ANY FORECASTED RAIN EVENT.
3. ADVISE WHERE BUILDING FOUNDATIONS, PAVEMENT, OR SOD WILL BE PLACED WITHOUT DELAY IN THE CONSTRUCTION SEQUENCE. SURFACE ROUGHENING IS NOT REQUIRED.
4. DISTURBED SURFACES SHALL BE ROUGHENED USING RIPPING OF TILLING EQUIPMENT ON THE CONTOUR OR TRACKING UP AND DOWN A SLOPE USING EQUIPMENT TREADS.
5. A FARMING DISK SHALL NOT BE USED FOR SURFACE ROUGHENING.

SURFACE ROUGHENING MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACE UPON DISCOVERY OF THE FAILURE.
4. VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SURFACE ROUGHENED.
5. IN NON-TURF GRASS FINISHED AREAS, SEEDING AND MULCHING SHALL TAKE PLACE IMMEDIATELY AFTER SURFACE ROUGHENED AREAS WITHOUT TOPSOILING OUT THE SURFACE DIRECTLY OVER SURFACE ROUGHENED AREAS WITHOUT TOPSOILING OUT THE SURFACE.
6. IN AREAS NOT SEEDED AND MULCHED AFTER SURFACE ROUGHENING, SURFACES SHALL BE RE-ROUGHENED AS NECESSARY TO MAINTAIN GROOVE DEPTH AND SMOOTH OVER ROLL EROSION.

SURFACE ROUGHENING (VTC)
NTS

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

1. SEE PLAN VIEW FOR
   - LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
   - TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TARP).
2. CONSTRUCTION MAT OR TARP STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.

VEHICLE TRACKING CONTROL (VTC)
NTS

WIDEFIELD COMMERCIAL CENTER SUBDIVISION FIL. NO. 1
STORMWATER MANAGEMENT PLAN
BEST MANAGEMENT PRACTICES (BMP'S)
EL PASO COUNTY, COLORADO

Project No.:	17044
Date:	February 28, 2018
Design:	NRK
Drawn:	CAD
Check:	AWMc
Revisions:	

FIGURE 5A

Figure 4A-LID.dwg/Jun 28, 2018

APPENDIX 6

Soils Borings and Tests and Groundwater

PRELIMINARY
SUBSURFACE SOIL INVESTIGATION
MINI STORAGE WAREHOUSE SITE
NE CORNER OF MESA RIDGE PKWY
AND POWERS BLVD
WIDEFIELD, COLORADO

Prepared For:

Glen Investment Group No. II
3 Widefield Boulevard
Colorado Springs CO 80911

Respectfully submitted,

SOIL TESTING AND ENGINEERING INC

Larry W. Chisman, Principal

Reviewed By:

Francis Magnussen, P.E.

LWC/mss

STE Report 090210

February 24, 2009

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INTRODUCTION

This report presents our preliminary subsurface soil investigation for Parcel #1, NE Corner of Mesa Ridge Parkway and Powers Boulevard located to the northeast of Mesa Ridge Parkway and Powers Boulevard. The site is generally a boot shaped parcel of ground as indicated on the "Site Location Plan". Parcel #1 is located in the western portion of the site.

This portion of the site has been utilized in the past as a storage area for expansion materials from various projects in the area. El Paso County stockpiled excess expansive soils from the construction of Powers Blvd. Expansive soils from overexcavations from different filings of The Glen at Widefield were also stockpiled on this site.

The purpose of the investigation was to identify the depth of stockpiled soils and verify native soil conditions supporting the material. Both auger borings and test pits were utilized to identify subsurface conditions. The test borings were located in the anticipated deeper elevations of the stockpiled soil. Test Boring Nos. 1 through 10 is located on this parcel.

Test Pit Nos. 1 through 3 were located at the lower elevations of the site where very little fill was anticipated. Visual classification of the surface soils at the toe of the fill slopes was also completed.

The information from this portion of the investigation will be utilized to estimate the quantity of existing fill. This information will be utilized for planning the proposed construction on Parcel #1.

In addition, the somewhat "U" shaped area east of this parcel was investigated. A stockpile of excess soil from the overlot grading of Filing Nos. 3 and 4 were placed across the surface. The majority of the stockpile has been removed. However, a shallow layer of this soft fill was anticipated.

It is our understanding portions of this area may be lowered for future commercial construction and the surficial fill soils, as well as the native soils considered as borrow material for Parcel #1.

Test Boring Nos. 11 through 13 and Test Pit Nos. 4 through 7 were completed to better define soil and fill conditions across this area. A portion of the test pits encountered fill monitored and tested during the overlot grading process for Filing #4 and construction of Wayfarer Drive to the north and east of this area. Controlled overlot fill from Filing #4 was encountered in Test Pit Nos. 6 and 7.

Recovered soils were visually grouped for laboratory testing. The Soil Type classifications will be compared to similar laboratory test results from Soil Types described in previous investigations.

The following reports were reviewed and data from these reports were utilized for the completion of this report:

- Lincoln Devores "Geotechnical Report for Sunrise Ridge Subdivision, Phase 2, Western Portion", El Paso County, Colorado. Job No 70380, dated February 24, 1989.
- Geotechnical Consultants Inc. report "Reconnaissance Geology and Surface soils 735 acre area Widefield Area, El Paso County, Colorado". Job No 2245 dated October 31, 1986.
- STE's Report, "Preliminary Subsurface Soil Investigation Sunrise Ridge Phase II, Colorado Springs, Colorado", Job No 80415 dated June 10, 1998.

INTRODUCTION
CONT'D

- STE Report, "Preliminary Subsurface Soil Investigation Marksheffel and Peaceful Valley Road for Widefield School District", Job No 90235 dated May 5, 1999.

- STE Report, "Preliminary Subsurface Soil Investigation Filings 1&2 The Glen at Widefield, Colorado", Job No 90356, dated June 30, 1999.

- STE Report, "Preliminary Subsurface Soil Investigation Proposed Future Elementary School Site in the Central Portion of Filings 1&2 the Glen at Widefield, Colorado", Job No 90989, October 20, 1999.

- STE Report, "Mesa Ridge Parkway, The Glen", Job No 00620, dated October 11, 2000.

- STE Report, "The Glen at Widefield", Job No 01149, dated April 19, 2001.

- Kleinfelders Report-Geotechnical Investigation, "Proposed Mesa Ridge Parkway, Settlement and Preload Analysis, Fountain, Colorado", Job No 65-1532-003 dated May 1, 2001.

- In addition, STE's daily notes and density test results as well as our experience gained in the development of Filing Nos. 1, 2, 3, 4 and 5 for The Glen at Widefield were considered for this letter.

- STE Report, "Preliminary Subsurface Soil Investigation, FMIC Ditch Relocation, Job No. 01149, dated April 19, 2001.

- STE Report, Preliminary Subsurface Soil Investigation, Filing #4, The Glen at Widefield, Widefield, Colorado, Job No. 01969, dated February 7, 2002.

- STE Preliminary Subsurface Soil Investigation, Filing #5, The Glen at Widefield, Widefield, Colorado, Job No. 040721, dated October 11, 2004.

- STE Preliminary Subsurface Soil Investigation, Filing #6, The Glen at Widefield, Widefield, Colorado, Job No. 060938, dated March 21, 2006.

- STE Preliminary Subsurface Soil Investigation, Filing #6, The Glen at Widefield, Widefield, Colorado, Job No. 051021, dated November 21, 2005.

- STE Preliminary Subsurface Soil Investigation, Filing #7, The Glen at Widefield, Widefield, Colorado, Job No. 060933, April 16, 2007

Based on information provided, storage units, one residence and associated parking and driveways are planned for Parcel #1. The existing uncontrolled fill will be used to construct the site for the proposed construction.

An existing seasonally active open drainage swale extends from southwest corner of Filing 2 to the south and discharges to the south of Mesa Ridge Parkway. A concrete drain pipe system is being considered for the discharge of storm water.

GENERAL SITE CONDITIONS AND PROJECT DESCRIPTION

LOCATION:

Parcel #1 is generally somewhat rectangular. It is bordered on the north by the lots of Filing 2, the west by Powers Blvd, to the south by Mesa Ridge Parkway and to the east by Wayfarer Drive and the undeveloped "U" shaped area between Wayfarer Drive and Mesa Ridge Parkway. This site is located to the southeast of metropolitan Colorado Springs, Colorado. The site is designated as Parcel #1, Glen Investment Group II. The approximate location of the site is shown on the enclosed Site Location Plan (Figure 1).

SITE DESCRIPTION:

This parcel is generally located on a west/southwest facing hill. A flattened stockpile of excess soil is present in the central portion to within 150 feet of the northern boundary.

The excess material on the storage warehouse site was primarily placed in two phases. The lower material is from the construction of Powers Blvd and Mesa Ridge High School. The upper portion of the fill pile is uncontrolled, expansive material from the overexcavation of residential excavations from Filing Nos. 3 and 4 of this subdivision.

The existing south facing fill slope along the northern boundary was constructed and tested by STE during the development phase of Filing 2. An access road to the lower western portion of the lot is present between the above referenced fill slope and the stockpiled materials.

The existing fill and western fill slope for Wayfarer Drive was tested by STE during construction. The roadway embankment in the lower southern portion of this site was also tested by STE.

A south draining channel extends from the storm sewer outlet at the southwest corner of Filing 2 and discharges to the south of Mesa Ridge Parkway.

The commercial site east of this parcel was also tested to determine the amount of fill remaining from a previous stockpile. The surficial soil and fill on this site may be used to raise the mini storage warehouse lot. This parcel and the stockpiled fill on Parcel #1 are the highest areas on the site.

The surface of both fill areas is generally bare to partially covered with weeds. The lower western and southern portions are covered with grasses and weeds. A few elm trees are located along the drainage channel.

Scattered debris is present at the ground surface at a few locations.

PROJECT DESCRIPTION: This investigation will be used to aid in the proposed planning phase for the proposed mini storage warehouse project. The fill depths recorded

from this investigation will be utilized to estimate existing fill quantities for the proposed grading.

The existing fill is unsuitable for supporting foundation floor slabs and associated driveways. The fill will be used to raise the site to grades determined by qualified personnel. All existing fill will be removed from its present location and properly compacted across the building and driveways on this site. If additional fill is required, a portion of the fill on the eastern commercial site may be used.

The proposed construction will consist of mini storage warehouses, resident house, open storage and associated parking and driveways. The building loads are anticipated to be light for the warehouse structures and light to moderate for the residential structure.

GENERAL SUBSURFACE CONDITIONS

SOIL TYPES:

Generally, one native soil type was apparent over the bedrock. Soil types from previous subsurface investigation were compared for classification and testing. The soils encountered are as follows:

- Uncontrolled fill on Parcel #1 – slightly sandy clay
- Type 2 – (both native and fill) sandy clay
- Type 4 – lensatic sandy claystone and clayey sandstone

These materials classify as a low plastic clay and are moisture sensitive and will change in volume with increases in moisture content.

The clays in both the fill and native soils have a moderate to high expansion potentials with their insitu moisture content.

Based on information obtained from the test pits, Soil Type 2 on this Parcel 1 was generally present at the ground surface in the lower portions over the bedrock. Depths range from approximately 6 inches in Test Pit No. 3 to 4 feet in Test Pit No. 1. The claystone bedrock is present at or near the surface at the toe of the fill slopes and in the western drainage channel.

In the borings placed across the fill area, very little native was apparent over the bedrock.

The uncontrolled surficial fill on the eastern commercial site was also relatively shallow ranging from one to three feet below the present ground surface in Test Pit Nos. 4 and 5. Type 2 soil was present below the surficial fill. Soft fill was also present at the ground surface in Test Pit No. 6. This material was over tested overlot fill from the construction of Filing 4 in this subdivision. Tested overlot fill was present over Soil Type 2 in Test Pit No.7.

Soft fill was apparent in the western portion of the eastern commercial property during the drilling program. The fill depths ranged from approximately 7 feet in Test Boring No. 1 to approximately 3 feet in Test Boring No. 13. The native soil below the fill was a Type 2 sandy clay.

Test pits were excavated to either native soil or tested overlot fill. All borings were advanced into the weathered bedrock. The borings were drilled into bedrock to verify its depth and identify any perched water lenses that may affect proposed construction.

Reference the attached "Test Boring and Test Pit Logs".

MANMADE FILL: Small areas of debris fill are present at the ground surface at various locations. Concrete debris was scattered on the surface around Test Boring No. 8. Debris was not apparent in the test borings and test pits.

However, pockets of debris may be encountered during the development phase. It will need to be evaluated and addressed at that time.

As discussed in the "General Subsurface Soil Conditions" section, the stockpiled soil is unsuitable to support the proposed construction. However, it will be removed and replaced as overlot fill during the development process.

GROUNDWATER:

Groundwater was not apparent in the borings or test pits during this investigation. The moisture content of the soil near the bottom of Test Boring No. 8 at the time of drilling was moderate. The boring was measured for water approximately 24 hours subsequent to drilling. At that time approximately 1 inch of water was present at the bottom of the boring at 30 feet. All other borings were dry.

Pockets of water perched on the bedrock may be encountered during the development process. They will be evaluated and addressed if encountered.

CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION:

The discussion in this section is based upon the review of previous reports, conditions encountered in the test borings and test pits completed on this site and on the anticipated building characteristics previously described. Representatives of STE should review grading plans, development plans etc. to ensure they will be appropriate for site conditions.

DEVELOPMENT PLANNING:

As discussed in this report, both the native soils and uncontrolled fill on this site are generally moderately to highly expansive. The fill process will include removing the uncontrolled fill and placing it across the site as properly compacted overlot fill.

The information provided in this report will be utilized to estimate the quantities of stockpiled fill and determine if sufficient fill is present to raise the site to anticipated grades.

The material on site is expansive and will affect final foundation and concrete and asphalt pavement designs.

UTILITY TRENCHES:

Based on information available to date, groundwater should not affect utility installation if the site is raised as proposed. All trenches will require sufficient sloping, shoring and bracing to provide safe working conditions. The contractor is responsible for providing the proper shoring and bracing to ensure adequate safety.

If water is encountered in the utility trenches, some type of dewatering will be required. The contractor is responsible for selecting and utilizing an appropriate dewatering system.

FOUNDATION TYPE: Based on information provided and assuming the development on this site uses the expansive soils entirely, shallow foundations in conjunction with an overexcavation/replacement scheme will be appropriate. A second alternative for the slab-on-grade storage units would be post tension slabs. The cost associated with post tension slabs would need to be compared with an overexcavation/replacement scheme to determine if it is cost effective.

For the purpose of this report, shallow foundations utilizing an overexcavation/replacement scheme will be addressed. Additional field and laboratory testing may be required for post tension foundation systems for the storage units. It is assumed an overexcavation will be utilized for the residential structure.

An overexcavation/replacement scheme will include the removal of a minimum of three feet of the expansive material from beneath the building footprint and replacement with an approved structural fill. The zone of overexcavation is to extend a minimum three feet laterally beyond the foundation components.

OVERLOT AND STRUCTURAL FILL:

During the development phase of this project, the on-site fill and native material will be utilized in the cut and fill operations. Due to moisture content of on-site soil and soil makeup, watering both the cut and fill areas will help moisture condition the material. Surfactants may aid in the moisture conditioning of silty clay.

All fill placed across the site during the development phase is to be compacted in lifts not to exceed 6 inches after compaction, while maintaining a minimum of 95% of its maximum Proctor dry density, ASTM D-698. The soil is to be placed at approximately ±2% of its Proctor optimum moisture content.

DESIGN PARAMETERS:

Based on information available to date, and assuming a shallow foundation system will be utilized in conjunction with an overexcavation/replacement scheme. Shallow foundation systems utilized in conjunction with an overexcavation/replacement scheme may be proportioned on the basis of a maximum allowable bearing capacities ranging from 2000 psf to 2600 psf. The final bearing capacity will be determined subsequent to completing overlot fill placement. Foundations are to be provided with a minimum of 30 inches of cover for frost protection. Foundation walls should be designed to span a minimum of 12 feet under the design loads to provide for foundation rigidity and account for anomalies in the soil profile.

The on-site native soils and structural fill can be taken to have the following equivalent hydrostatic fluid pressures:

Soil Type	Equivalent Fluid Pressure		
	Active (pcf)	Passive (pcf)	At Rest (pcf)
Imported select Granular fill	38	291	56
Native and existing fill	59	138	71

The above values assume level backfill conditions and may require modifications for the effects of surcharge loads, sloping backfill, etc. The design parameters provided must be verified by observation of the foundation excavation.

BACKFILL: Where overexcavation/replacement schemes are warranted due to highly expansive soils, walls retaining in excess of four feet of backfill should be backfilled with granular, non-expansive materials. However, the clay may be used in the upper 18 inches of landscaped areas to create a relatively impermeable cap.

Again, post tension foundations and slabs can be considered for the storage units. It may be possible to use these systems on the expansive soil.

Pavement sections on these soils may be relatively thick.

FLOOR SLABS:

Since expansive soil is present on this site, movement of floor slabs-on-grade is probable. The magnitude of this movement is unpredictable. Concentrating slab loads cannot control the movement. The only positive solution, in our opinion, would be to utilize structural floors with an air space between the expansive soils and floor system. Economic constraints may prevent the use of structural floors. Therefore, if floor slabs-on-grade are utilized in conjunction with an overexcavation replacement scheme, the following recommendations are made:

- Slabs must be separated from all structural and non-structural portions of the building in such a manner that they do not transmit floor slab movement to the roof or overlying floor.

- Stairways and doorways must be designed to accommodate slab movement. Sheetrock and pre-hung doors must not rest on stairway stringers or the slab.

- Columns, pipes, plumbing and utilities penetrating the slab must be isolated from the slab to provide for slab movement.

- Water lines and gas lines connected to water heaters and/or furnaces resting on the slab must be constructed with flexibility to allow for slab movement. Heater ducts must be provided with collapsible connections between the furnace and ductwork.

- Backfill placed below floor slabs should be granular material and is to be compacted to a minimum of 90% of its maximum modified Proctor dry density, ASTM D-698.

The above recommendations are considered prudent and should be followed in order to mitigate the effects of floor slab movement. They do not, however, guarantee that movement will not occur in the event that the subsoils increase in moisture content.

CONCRETE TYPE: All concrete in contact with the soil should be made using a Type II cement for sulfate resistance. Calcium chloride must not be added to a Type II cement. Foundation forms should remain in place for an appropriate length of time in accordance with ACI (American Concrete Institute) recommendations in the ACI Manual of Standard Practice, Part 2.

In accordance with the International Building Code and good construction practices, concrete must not be placed on frozen ground.

SURFACE DRAINAGE AND GRADING:

The ground surface within 10 feet of the building must be sloped away from the buildings with a minimum gradient of 5%. This is equivalent to six inches of fall across this 10-foot zone. Two-percent slope would be appropriate in paved areas. Where this is not possible, a well-defined swale should be constructed to intercept the surface water and carry it quickly and safely around and away from the building. Plastic should not be utilized beneath decorative rock or bark, etc. A breathable filter fabric should be utilized in lieu of plastic membranes.

Decorative edging, sidewalks and other flatwork should be planned and constructed so that they do not restrict rapid surface flows away from the foundation region.

Roof downspouts should be extended across all backfill zones and discharged into an area of positive drainage away from the structure.

Decorative edging, sidewalks and other flatwork should be planned and constructed so that they do not restrict rapid surface flows away from the foundation region.

Roof downspouts should be extended across all backfill zones and discharged into an area of positive drainage away from the structure.

No sod, grass, shrubs, flowers, trees, or other vegetation requiring water should be placed within five feet of the foundation or within any backfill zone. Sprinklers must not discharge water within five feet of the foundation or within any backfill zone.

In addition, control of drainage and grading is a critical factor in the future performance of the proposed structures. Cut and fill operations should utilize the natural contours of the site as much as possible.

SUBSURFACE DRAINAGE:

At a minimum, a subsurface perimeter drain will be required around the perimeter of each foundation system.

OPEN EXCAVATION OBSERVATIONS:

The foundation excavation for each structure is to be observed prior to setting forms or pouring concrete in order to verify that adequate bearing materials are present and that no unsuitable materials exist.

CLOSING:

This site is located in a very complex geologic environment. Some differences in soil and groundwater conditions can be anticipated during the development and construction phases.

Our investigation consisted of random sampling a heterogeneous material. As a result, subsurface soil conditions encountered during development and construction may differ somewhat from the conditions described in this report.

Construction and design personnel should be made familiar with the contents herein. Prior to any site work, a meeting is to be held to familiarize all involved with the overlot grading with existing site conditions and proposed cut and fill operations. If discrepancies are noted during construction, Soil Testing and Engineering Inc. should be notified so that construction problems may be avoided.

This report has been prepared in accordance with generally accepted engineering standards of care for the time and region. No other guarantees or warranties are either expressed or implied.

We trust this report provides you with the information you require. Should questions arise or further information is needed, please contact Soil Testing and Engineering Inc. at your convenience.

Soil Testing and Engineering Inc. appreciates the opportunity to provide you with the engineering services you require.

GEOLOGY

Physiographically, the site lies in the western portion of the Great Plains Physiographic Province. Approximately 8 miles west of the site is a major structure known as the Front Range Fault System. This fault system along with the Rampart Range Fault to the north marks the boundary between the Great Plains Physiographic Province and the Southern Rocky Mountain Province. Bedrock in the area of the site tends to be dipping in an easterly direction. The bedrock in this area is sedimentary in nature and is Cretaceous aged.

The bedrock encountered in the subsurface investigation for this site is the Pierre Shale Formation (KP). Overlying the Pierre Shale are Quaternary aged layers of colluvial, alluvial, residual and eolian soils.

Three mappable units were identified on this site.

Af – Artificial Fill – Stockpiled uncontrolled expansive clay fill is present across the site.

Qp – Piney Creek Alluvium – Holocene aged alluvial material – grey to brown firmly compacted silts, clays and sand, contains sand and gravel lenses at the bottom of the deposit. Slope stability is medium to poor. Vertical cuts are stable when dry, but become unstable when wetted.

Kp – Pierre Shale – Cretaceous aged marine shale which contains interbedded lenses of sandstone and claystone shale. Bentonite beds are encountered throughout the formation. Foundation stability is poor. Expansive pressures range from low to very big depending on sand/clay content.

The Reconnaissance Map of Colorado Springs and Vicinity by Scott and Wobus (1973), The Geologic Map of Colorado Springs/Castle Rock area, Front Range Urban Corridor, Colorado by Trimble and Machette (1979) and The Reconnaissance Geology and Surface Soils 735 acres, Widefield Area, El Paso County Co, by Geotechnical Consultants, Inc. (GCI Job No. 2245, dated October 31, 1986) were used in evaluating the site. The test borings and test pits by STE were also used to evaluate the site and are included with this report (Figure Nos. 4 – 14).

OVERLOT GRADING

This portion of the report is intended to provide specifications to establish the procedures for preparing areas to be filled, including stripping and grubbing, stabilization of soft soils, and placing and compacting fill soils to the lines and grades shown on the grading plans.

- A meeting is to be held on site prior to any stripping, grubbing or fill placement. Representatives from the owner, general contractor, earth moving contractor and STE are to be present at the meeting to familiarize all parties with the proposed project.

- The owner will establish the project boundaries. Responsibilities of all cut and fill elevations necessary for proper location and execution of the work is the responsibility of the owner. He will retain an engineer to establish vertical and horizontal control for the grading work and to determine the final rough grade of the fill.

- In accordance with generally accepted construction practices, the contractor will be solely and completely responsible for conditions on the job site including safety of all personnel and property during the performance of the work. This requirement will apply continuously and not be limited to normal working hours.

- The responsibility of the soil engineer, if hired to do so, is to conduct construction review of the contractor's performance and does not include review of the adequacy of the contractor's safety measures on or near the construction site.

- Soil Testing and Engineering Inc. shall be retained by the owner to observe and test the earthwork in accordance with specifications provided. Adequate observations and testing will be provided to meet construction specifications. It shall be the responsibility of the contractor and owner to assist personnel of Soil Testing and Engineering Inc. to keep apprised of work schedules, changes in conditions or design and new information and data as it becomes available so that we may evaluate any changes. In the event that any unusual conditions not covered by these specifications are encountered during the grading operation, Soil Testing and Engineering Inc shall be contacted for further recommendations.

- If, in the opinion of the representative of Soil Testing and Engineering Inc., substandard conditions are encountered, such as questionable or unsuitable soil conditions, unacceptable moisture content, inadequate compaction or adverse weather, etc., the representative may stop construction until the conditions are remedied, corrected or may recommend rejection of this work. The presence of the representative from Soil Testing and Engineering Inc. shall not relieve the contractor from its duty to place all fill material to the specified degree of compaction, and to complete all work in accordance with specifications.

- All soils used for fill must be approved by a representative of Soil Testing and Engineering Inc.

OVERLOT GRADING
CONT'D

- When the slope of the natural ground receiving fill exceeds 20% (5' horizontal to 1' vertical), the original ground shall be stepped or benched. Benches shall be cut to a firm, competent soil condition. The lower bench shall be at least 10 feet wide or 1½ times the compaction equipment width, whichever is greater. The bottom toe shall be sloped back into the hillside a gradient not less than 2%. All benches shall be at least 6 feet wide. All horizontal portions of each bench shall be compacted prior to receiving fill.

- All natural ground to receive fill must be properly scarified, watered and compacted prior to placing fill.

- Soil Testing and Engineering Inc. shall take an adequate number of density tests to determine if the fill satisfies project specifications. Density test results and daily notes will be provided periodically during the development process. Any failing tests or areas which do not satisfy project specifications will be reworked and retested to the satisfaction of the representative of Soil Testing and Engineering Inc.

- In areas where water is within 4 feet of the proposed fill, static compaction equipment shall be utilized. Vibrating sheepsfoot or smooth drum rollers are not to be used in areas above water until a minimum of 6 feet of compacted material is in place.

- The contractor is solely responsible for the design, maintenance and operation of any required dewatering system. The contractor shall perform such independent investigation as he deems necessary to satisfy himself as to the subsurface groundwater conditions and unstable soil conditions to be encountered throughout the construction.

- No fill shall be placed, spread or rolled while it is frozen, thawing or during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until a representative of Soil Testing and Engineering Inc. indicates that the moisture content and density of the previously placed fill are as specified. Fill surfaces may be scarified and recompacted after rainfall if necessary, to obtain proper moisture density relation.

GENERAL SITE WORK

This section of the report is intended to provide recommendations and to establish general procedures for the excavation for the proposed structure.

- The owner or contractor will establish the project boundaries including all cut and fill elevations. Execution of the work is the responsibility of the owner. He will retain qualified personnel to establish horizontal and vertical control for the excavation and will determine the final elevations for the structural fill.

- In accordance with generally accepted construction practices, the contractor will be solely responsible for conditions on the job site including supervision of all personnel and property during the performance of the work. This requirement will apply continuously and not be limited to normal working hours.

- The responsibility of the soil engineer, if hired to do so, is to observe the open excavation and provide final soil parameters for the proposed foundation design and does not include review of the adequacy of the contractor's safety measures in or near the construction site.

- Soil Testing and Engineering Inc. shall be retained by the owner to observe and test any structural fill in accordance with the specifications provided. Adequate observations and testing will be provided to meet construction specifications.

- All soils used for structural fill must be approved by a representative of Soil Testing and Engineering Inc.

- Where structural fill is required, Soil Testing and Engineering Inc. shall take an adequate number of density tests to determine if the structural fill satisfies project specifications. Density test results will be provided subsequent to any fill placement. Any failing tests or areas which do not satisfy project specifications will be reworked and retested to the satisfaction of the representative of Soil Testing and Engineering Inc.

- Utility trenches must be properly shored or sloped in accordance with local, state, federal or OSHA guidelines or regulations. The contractor is responsible for providing proper shoring and/or sloping to provide adequate safety.

FIELD EXPLORATION PROGRAM

1. The field investigation on this site consisted of drilling 14 test borings and 7 test pits as shown on the enclosed Test Boring and Test Pit Location Plan (Figure 2). Test borings were advanced by means of a power-driven, continuous auger drill to depths ranging from 15 feet to 40 feet below the present ground surface. The information from the test pits completed on the lower level of this lot and the commercial site to the east were utilized to determine soil conditions across this site and potential borrow material from the commercial site to the east.

2. Samples were obtained using the Standard Penetration Test, ASTM D-1586, utilizing a two-inch, split spoon and California sampler.

3. Bulk sampling methods were also utilized.

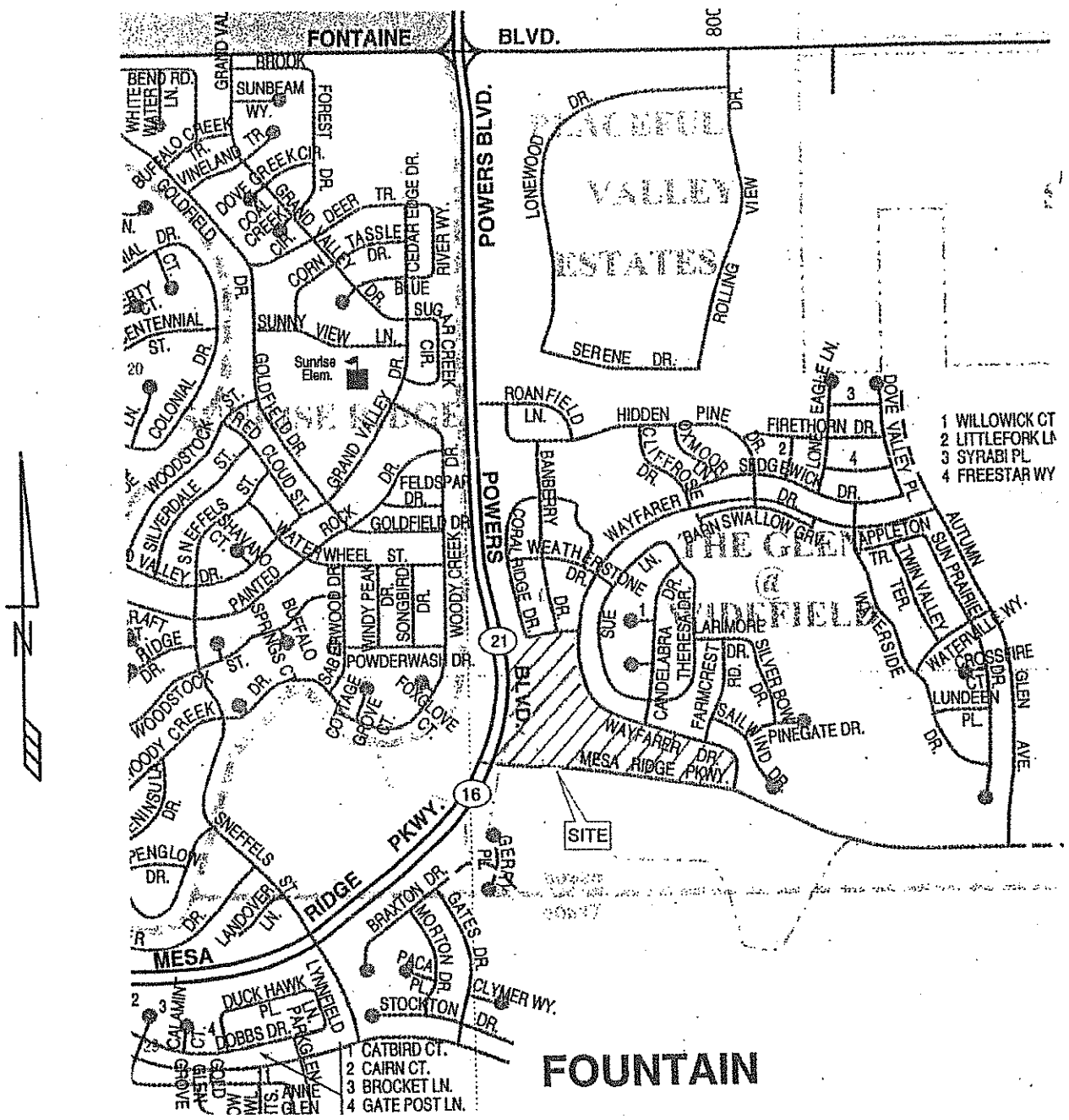
LABORATORY TESTING PROGRAM

1. Moisture content, ASTM D-2216 was obtained in the laboratory for all recovered samples.

2. A grain size analysis, ASTM D-2487, and determination of the Atterberg Limits, ASTM D-4318, were performed on visually grouped samples in order to classify the soil in accordance with the Unified Soils Classification System. Utilizing this method, the fills, Soil Types 2 and 4 classified as low plasticity sandy clay (CL).

3. Swell tests were performed in order to determine the expansive characteristics of remolded samples of all soil types.

CLIENT: GLEN INVESTMENT GROUP NO II	PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD



SITE LOCATION PLAN

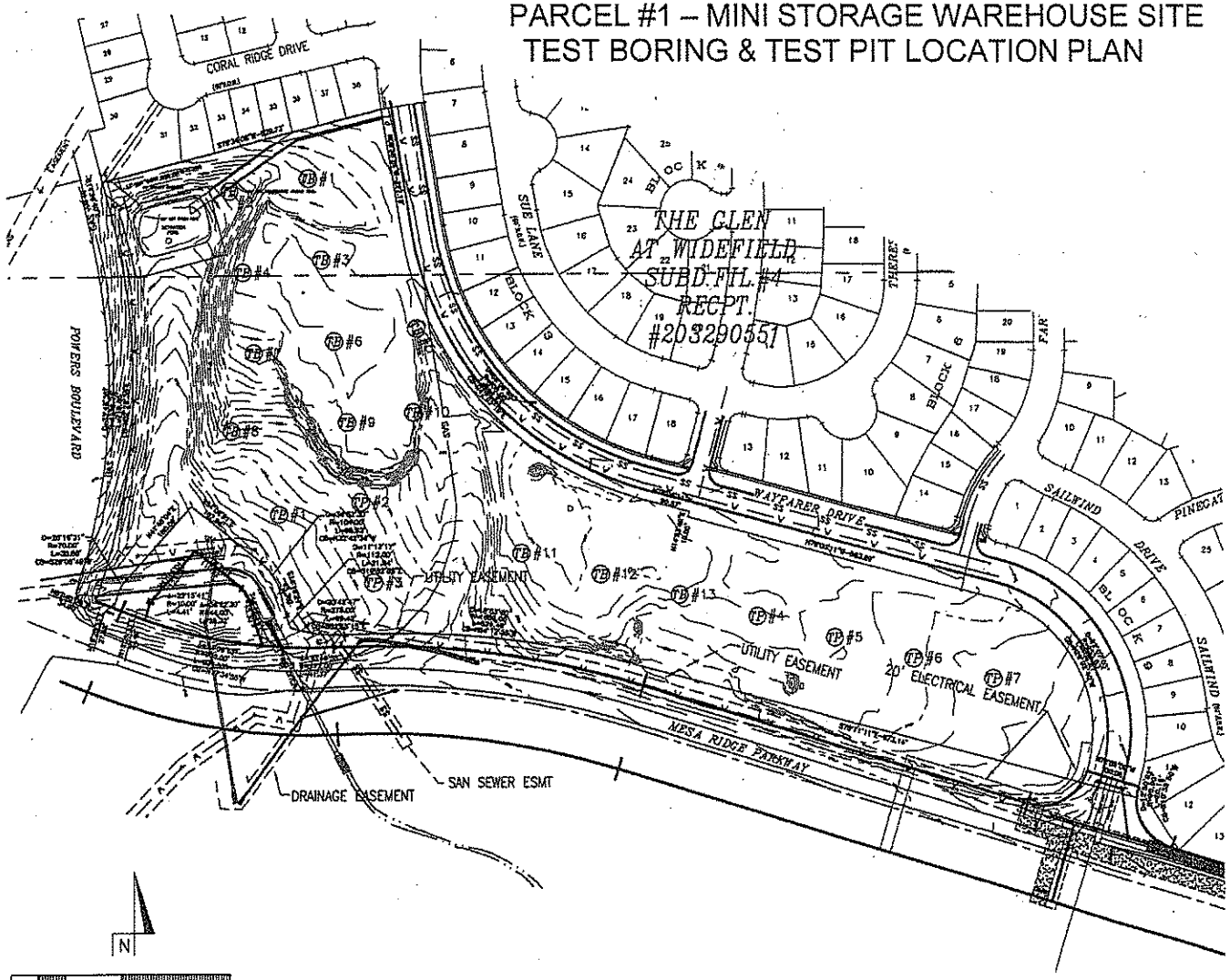
DRAWN	DATE	CHECKED	DATE
mss		LWC	

STE

SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 1

PARCEL #1 – MINI STORAGE WAREHOUSE SITE
TEST BORING & TEST PIT LOCATION PLAN



LEGEND

- BOUNDARY LINE
- EASEMENT LINE
- CENTERLINE
- ADJACENT LOT LINE
- 2ft. EXISTING CONTOUR
- 500 10ft. EXISTING CONTOUR
- TB# TEST BORE LOCATION & NUMBER
- TP# TEST PIT LOCATION & NUMBER

STE JOB NO. 090210
FIGURE NO. 2

For and on Behalf of
Pinnacle Land Surveying Co., Inc.
John W. Towner
P.L.S. #25965

PINNACLE LAND SURVEYING, INC.
121 County Road 5, Divide, CO 80814

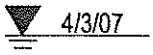
STE TEST BORING & TEST PIT LOCATION PLAN

SCALE: 1"= 80'	DRAWN BY: MWW	FILE: 090010090805WG
DATE: 02/17/09	CHECKED BY: JWT	JOB NO. 090010000

15 STANDARD PENETRATION TEST -- ASTM C-1586. PRODUCED BY DRIVING A STANDARD 2" O.D. SPLIT SPOON SAMPLER INTO THE SOIL BY DROPPING A 140 lb HAMMER ONTO THE SPOON. THE NUMBER INDICATES THE NUMBER OF HAMMER DROPS REQUIRED TO DRIVE THE SPOON 12" INTO THE SOIL PROFILE.

1 SOIL TYPE NUMBER DESIGNATION IN REPORT

12.6 MOISTURE CONTENT OF SAMPLE



WATER LEVEL AND DATE MEASURED

SYMBOLS AND NOTES

DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE

SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 3

CLIENT: GLEN INVESTMENT GROUP NO. II

PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD

TEST BORING NO. 1
DATE DRILLED: 2/18/09

REMARKS:
SURVEY POINT # 3401

FILL; STOCKPILED FOR SEVERAL YEARS. CLAY, SANDY, FIRM, LOW MOISTURE, GREEN TO BROWN

CLAY, SANDY, HARD, LOW TO MODERATE MOISTURE, GREEN TO RUST

WEATHERED CLAYSTONE, SANDY, HARD, LOW MOISTURE, GREEN TO RUST

DEPTH (ft)	SYMBOL	SAMPLES	BLOWS per foot	WATER CONTENT %	SOIL TYPE
5			BULK	9.1	FILL
10			41	15.3	4
15					
20					
25					
30					
35					
40					

TEST BORING NO. 2
DATE DRILLED: 2/18/09

REMARKS:
SURVEY POINT # 3402
MEASURED FOR WATER:
10 FT. DRY

FILL; STOCKPILED FOR SEVERAL YEARS. CLAY, SANDY, FIRM, LOW MOISTURE, GREEN TO BROWN

WEATHERED CLAYSTONE, SANDY, HARD, LOW MOISTURE, GREEN TO RUST

DEPTH (ft)	SYMBOL	SAMPLES	BLOWS per foot	WATER CONTENT %	SOIL TYPE
5			36	14.6	FILL 4
10			50	14.1	4
15					
20					
25					
30					
35					
40					

TEST BORING LOGS

DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE

SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 4

CLIENT: GLEN INVESTMENT GROUP NO. II

PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD

TEST BORING NO. 3
DATE DRILLED: 2/18/09

REMARKS:
SURVEY POINT # 3405

DEPTH (ft)	SYMBOL	SAMPLES	BLOWS per foot	WATER CONTENT %	SOIL TYPE
					FILL
5			BULK	8.5	FILL
10			21	17.2	FILL
15			17	16.3	FILL
20			BULK	14.1	FILL
25			50/8"	10.9	4
30					
35					
40					

FILL STOCKPILED FOR SEVERAL YEARS; FIRM TO STIFF, LOW TO MODERATE MOISTURE, GREEN TO BROWN TO BLUE GRAY

WEATHERED CLAYSTONE, SANDY, DENSE, LOW MOISTURE, GREEN

TEST BORING NO. 4
DATE DRILLED: 2/18/09

REMARKS:
SURVEY POINT # 3404

DEPTH (ft)	SYMBOL	SAMPLES	BLOWS per foot	WATER CONTENT %	SOIL TYPE
5			BULK	7.9	FILL
10			19	16.7	FILL
15			BULK	15.9	FILL
20			19	12.0	FILL
25			BULK	12.8	FILL
30			43	10.1	4
35			50/6"	9.7	4
40					

FILL STOCKPILED FOR SEVERAL YEARS; FIRM TO STIFF, LOW TO MODERATE MOISTURE, GREEN TO BROWN TO BLUE GRAY

WEATHERED CLAYSTONE, SANDY, DENSE, LOW MOISTURE, GREEN

TEST BORING LOGS

DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE
SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 5

CLIENT: GLEN INVESTMENT GROUP NO. II

PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD

TEST BORING NO. 5
DATE DRILLED: 2/18/09

REMARKS:
SURVEY POINT # 3407

DEPTH (ft)	SYMBOL	SAMPLES	BLOWS per foot	WATER CONTENT %	SOIL TYPE
0					
			7	8.5	FILL
5					
			6	12.8	FILL
10					
			BULK	16.6	FILL
15					
			41	14.3	4
20					
25					
30					
35					
40					

FILL STOCKPILED FOR SEVERAL YEARS; CLAY, SANDY, FIRM, LOW TO MODERATE MOISTURE, LIGHT BROWN TO GREEN

WEATHERED CLAYSTONE, SANDY, HARD, LOW MOISTURE, GREEN TO RUST

TEST BORING NO. 6
DATE DRILLED: 2/18/09

REMARKS:
SURVEY POINT # 3408

DEPTH (ft)	SYMBOL	SAMPLES	BLOWS per foot	WATER CONTENT %	SOIL TYPE
0					
			BULK	9.4	FILL
5					
			5	10.4	FILL
10					
			BULK	14.5	FILL
15					
			13	16.7	
20					
			BULK	15.3	FILL
25					
			11	10.1	FILL
30					
			50/4"	9.7	4
35					
40					

FILL STOCKPILED FOR SEVERAL YEARS; CLAY, SANDY, FIRM TO STIFF, LOW TO MODERATE MOISTURE, LIGHT BROWN TO GREEN TO GRAY TO BROWN

LENSATIC; CLAYSTONE AND SANDSTONE, DENSE, LOW MOISTURE, GREEN TO RUST TO LIGHT BROWN

TEST BORING LOGS

DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE

SOIL TESTING & ENGINEERING INC.

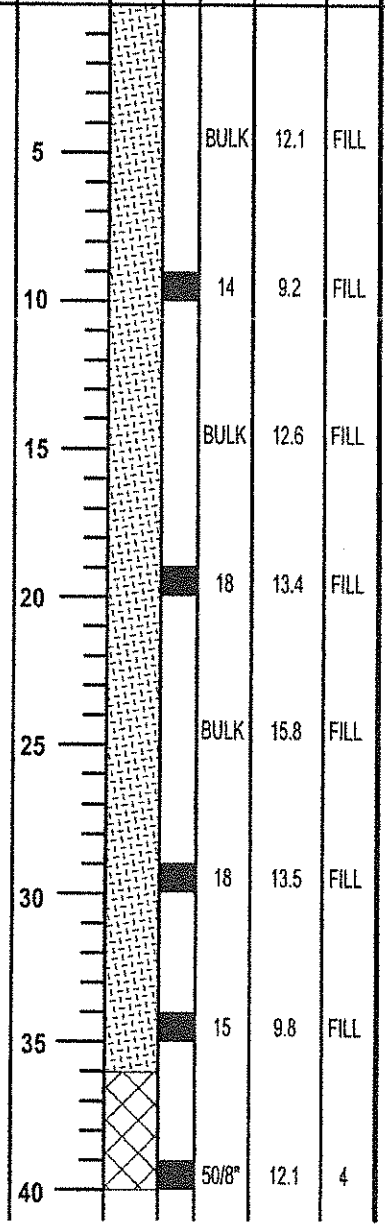
JOB No. 090210
FIG No. 6

CLIENT: GLEN INVESTMENT GROUP NO. II

PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD

TEST BORING NO. 7
DATE DRILLED: 2/18/09

REMARKS:
SURVEY POINT # 3409

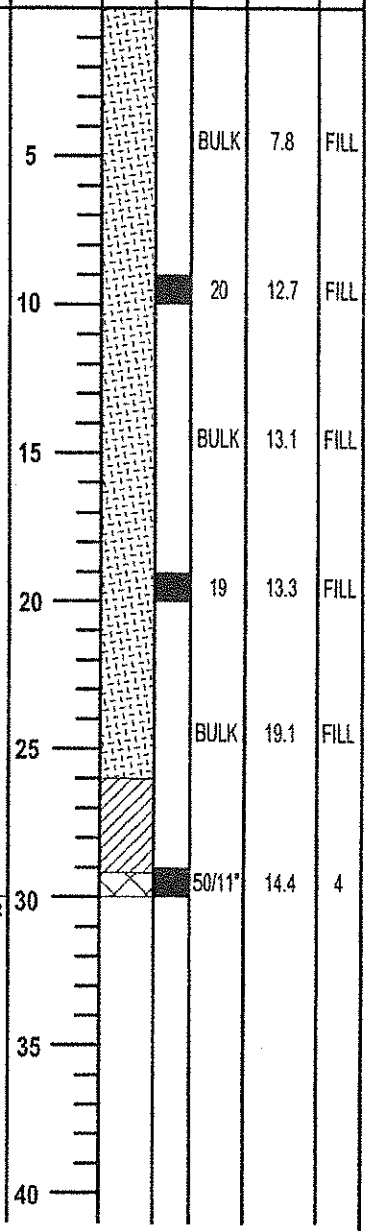


FILL STOCKPILED FOR SEVERAL YEARS; STIFF, LOW TO MODERATE MOISTURE, LIGHT GREEN TO GREEN TO RUST TO GRAY

WEATHERED CLAYSTONE, AND SANDSTONE, DENSE, LOW MOISTURE, GREEN TO RUST

TEST BORING NO. 8
DATE DRILLED: 2/18/09

REMARKS: 2/19/09
SURVEY POINT # 3412
MEASURED FOR WATER;
1 INCH IN BOTTOM @ 30 FT.



FILL STOCKPILED FOR SEVERAL YEARS; STIFF TO VERY STIFF, LOW TO MODERATE MOISTURE, LIGHT BROWN TO GREEN TO BROWN

CLAY, SANDY, STIFF, MODERATE MOISTURE, GREEN

2/19/09
1" OF WATER

WEATHERED CLAYSTONE, AND SANDSTONE, DENSE, LOW MOISTURE, GREEN TO RUST

TEST BORING LOGS

DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE
SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 7

CLIENT: GLEN INVESTMENT GROUP NO. II

PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD

TEST BORING NO. 9
DATE DRILLED: 2/18/09

REMARKS:
SURVEY POINT # 3413

DEPTH (ft)	SYMBOL	SAMPLES	BLOWS per foot	WATER CONTENT %	SOIL TYPE	
					FILL	FILL STOCKPILED FOR SEVERAL YEARS; CLAY, SANDY, SOFT TO STIFF, LOW TO MODERATE MOISTURE, LIGHT BROWN TO GREEN
5			BULK	12.1	FILL	
10			4	13.8	FILL	
15			NO RECOVERY UP AUGER		FILL	
20			12	10.3	FILL	
25			BULK	13.6	4	LENSATIC WEATHERED CLAYSTONE AND SANDSTONE, DENSE, LOW MOISTURE, GREEN TO RUST
30			50/10"	11.7	4	
35						
40						

TEST BORING NO. 10
DATE DRILLED: 2/18/09

REMARKS:
SURVEY POINT # 3414

DEPTH (ft)	SYMBOL	SAMPLES	BLOWS per foot	WATER CONTENT %	SOIL TYPE	
					FILL	FILL STOCKPILED FOR SEVERAL YEARS; CLAY, SANDY, SOFT TO STIFF, LOW TO MODERATE MOISTURE, LIGHT BROWN TO GREEN
5			BULK	8.5	FILL	
10			4	10.0	FILL	
15			BULK	11.1	FILL	
20			32	12.1	-	LENSATIC HIGHLY WEATHERED CLAYSTONE AND SANDSTONE, HARD, LOW MOISTURE, LIGHT BROWN TO GREEN
25						
30						
35						
40						

TEST BORING LOGS

DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE
SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 8

CLIENT: GLEN INVESTMENT GROUP NO. II

PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD

TEST BORING NO. 11
DATE DRILLED: 2/19/09

REMARKS:
SURVEY POINT # 3420

DEPTH (ft)	SYMBOL	SAMPLES	BLOWS per foot	WATER CONTENT %	SOIL TYPE	
					FILL	FILL FROM OVERLOT GRADING OF FILING # 3 & 4, SANDY CLAY AND CLAYEY SAND, SOFT TO FIRM, LOW MOISTURE, LIGHT GREEN TO LIGHT BROWN TO GREEN
5			7/14"	8.5	FILL	
10			10	10.0	2	CLAY, SANDY, STIFF, LOW MOISTURE, REDISH BROWN
15			9	11.1	2	
20			50/10"	12.1	4	LENSATIC; HIGHLY WEATHERED CLAYSTONE AND SANDSTONE, HARD TO DENSE, LOW MOISTURE, LIGHT BROWN TO GREEN
25						
30						
35						
40						

TEST BORING NO. 12
DATE DRILLED: 2/19/09

REMARKS:
SURVEY POINT # 3421

DEPTH (ft)	SYMBOL	SAMPLES	BLOWS per foot	WATER CONTENT %	SOIL TYPE	
					FILL	FILL FROM OVERLOT GRADING OF FILING # 3 & 4, SANDY CLAY AND CLAYEY SAND, STIFF, LIGHT BROWN
5			15	14.2	FILL	
10			7	13.2	2	CLAY, SANDY, FIRM, LOW MOISTURE, REDISH BROWN
15			12	10.0	2	
20			40	9.7	4	LENSATIC; HIGHLY WEATHERED CLAYSTONE AND SANDSTONE, HARD, LOW MOISTURE, GREEN
25						
30						
35						
40						

TEST BORING LOGS

DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE
SOIL TESTING & ENGINEERING INC.

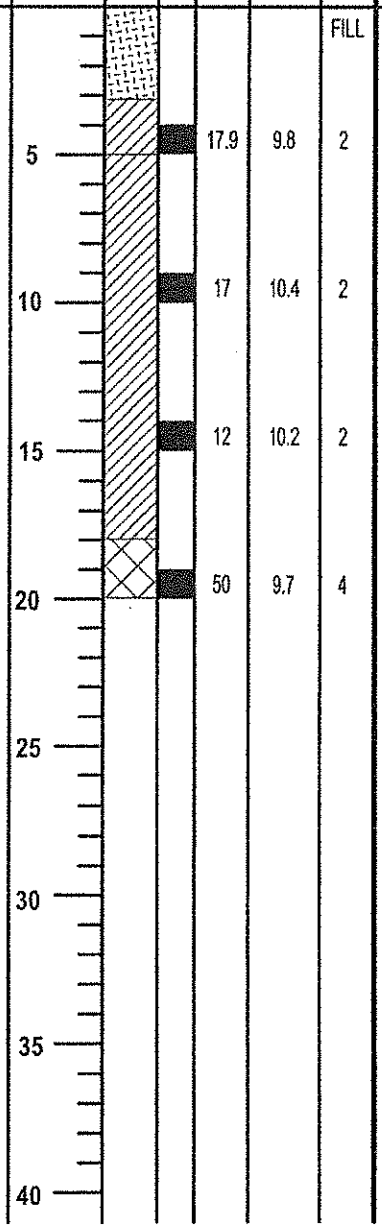
JOB No. 090210
FIG No. 9

CLIENT: GLEN INVESTMENT GROUP NO. II

PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD

TEST BORING NO. 13
DATE DRILLED: 2/19/09

REMARKS:
SURVEY POINT # 3422

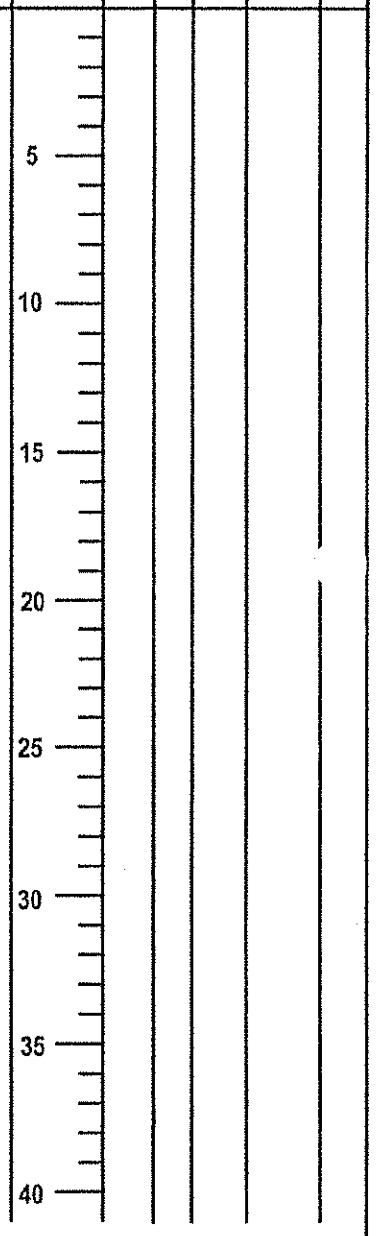


FILL FROM OVERLOT GRADING OF FILING # 3 & 4, SANDY CLAY AND CLAYEY SAND, SOFT, LOW MOISTURE, LIGHT BROWN TO GREEN

CLAY, SANDY, STIFF, LOW MOISTURE, LIGHT BROWN

CLAY, SANDY, STIFF, LOW MOISTURE, REDISH BROWN

WEATHERED CLAYSTONE, HARD, LOW MOISTURE, GREEN



TEST BORING LOGS

DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE

SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 10

CLIENT: GLEN INVESTMENT GROUP NO. II

PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD

BACKHOE PIT NO. 1
DATE: 2/18/09

REMARKS:
SURVEY POINT # 3417

STOCKPILED FILL:
FROM FILINGS # 3 & 4
CLAY, SILTY TO SANDY,
SOFT, LOW MOISTURE

CLAY, SANDY, STIFF,
LOW MOISTURE,
REDISH BROWN

WEATHERED CLAYSTONE,
DENSE, LOW MOISTURE,
DARK GRAY

DEPTH (ft)	SYMBOL	SAMPLES	WATER CONTENT %	SOIL TYPE
1				STOCK PILED FILL
2		BULK	7.8	
3				
4				2
5		BULK	7.5	4
6				
7				
8				
9				
10				
11				
12				

BACKHOE PIT NO. 2
DATE: 2/18/09

REMARKS:
SURVEY POINT # 3416

STOCKPILED FILL:
FROM FILINGS # 3 & 4
CLAY, SILTY TO SANDY,
SOFT, LOW MOISTURE

CLAY, SANDY, STIFF,
LOW MOISTURE,
REDISH BROWN

WEATHERED CLAYSTONE,
DENSE, LOW MOISTURE,
DARK GRAY

DEPTH (ft)	SYMBOL	SAMPLES	WATER CONTENT %	SOIL TYPE
1		BULK	10.1	STOCK PILED FILL 2
2				
3				
4		BULK	7.5	4
5				
6				
7				
8				
9				
10				
11				
12				

BACKHOE PIT LOGS

DRAWN	DATE	CHECKED	DATE
MSS			

STE
SOIL TESTING & ENGINEERING INC.

JOB No.
090210
FIG No.
11

CLIENT: GLEN INVESTMENT GROUP NO. II

PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD

BACKHOE PIT NO. 3
DATE: 2/18/09

REMARKS:
SURVEY POINT # 3419

DEPTH (ft)	SYMBOL	SAMPLES	WATER CONTENT %	SOIL TYPE
0				FILL
1		BULK	7.2	4
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

FILL, CLAY, SANDY,
SOFT, LOW MOISTURE,
LIGHT BROWN

WEATHERED CLAYSTONE,
DENSE, LOW MOISTURE,
DARK GRAY

BACKHOE PIT NO. 4
DATE: 2/18/09

REMARKS:
SURVEY POINT # 3425

DEPTH (ft)	SYMBOL	SAMPLES	WATER CONTENT %	SOIL TYPE
0				STOCK PILED FILL
1				
2		BULK	10.8	2
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

STOCKPILED FILL:
FROM FILINGS # 3 & 4
CLAY, SILTY TO SANDY,
SOFT, LOW MOISTURE

CLAY, SANDY, STIFF,
LOW MOISTURE,
REDISH BROWN

BACKHOE PIT LOGS

DRAWN	DATE	CHECKED	DATE
MSS			

STE
SOIL TESTING & ENGINEERING INC.

JOB No.
090210
FIG No.
12

CLIENT: GLEN INVESTMENT GROUP NO. II

PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD

BACKHOE PIT NO. 5
DATE: 2/18/09

REMARKS:
SURVEY POINT # 3424

STOCKPILED FILL:
FROM FILINGS # 3 & 4
CLAY, SANDY, SOFT TO FIRM, MODERATE MOISTURE, MOTTLED

CLAY, SANDY, STIFF, MODERATE MOISTURE, REDISH BROWN

DEPTH (ft)	SYMBOL	SAMPLES	WATER CONTENT %	SOIL TYPE
1				STOCK PILED FILL
2		BULK	16.2	
3				
4		BULK	19.5	2
5				
6				
7				
8				
9				
10				
11				
12				

BACKHOE PIT NO. 6
DATE: 2/18/09

REMARKS:
SURVEY POINT # 3425

STOCKPILED FILL:
FROM FILINGS # 3 & 4
CLAY, SANDY, SOFT TO FIRM, MODERATE MOISTURE, MOTTLED

OVERLOT FILL:
MONITORED BY STE;
CLAY, SILTY TO SANDY, VERY STIFF, LOW TO MODERATE MOISTURE, BROWN TO GREEN

DEPTH (ft)	SYMBOL	SAMPLES	WATER CONTENT %	SOIL TYPE
1		BULK	15.8	STOCK PILED FILL
2				
3		BULK	11.7	OVER LOT FILL
4				
5				
6				
7				
8				
9				
10				
11				
12				

BACKHOE PIT LOGS

DRAWN	DATE	CHECKED	DATE
MSS			

STE
SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 13

CLIENT: GLEN INVESTMENT GROUP NO. II

PROJECT: MESA RIDGE PKWY (NE CORNER) & POWERS BLVD

BACKHOE PIT NO. 7
DATE: 2/18/09

REMARKS:
SURVEY POINT # 3426

OVERLOT FILL
MONITORED BY STE;
CLAY, SILTY TO SANDY,
VERY STIFF, MODERATE
MOISTURE, BROWN
TO GREEN

CLAY, SANDY, STIFF,
LOW MOISTURE,
REDISH BROWN

DEPTH (ft)	SYMBOL	SAMPLES	WATER CONTENT %	SOIL TYPE
1		BULK	12.2	FILL
2				
3		BULK	8.5	2
4				
5				
6				
7				
8				
9				
10				
11				
12				

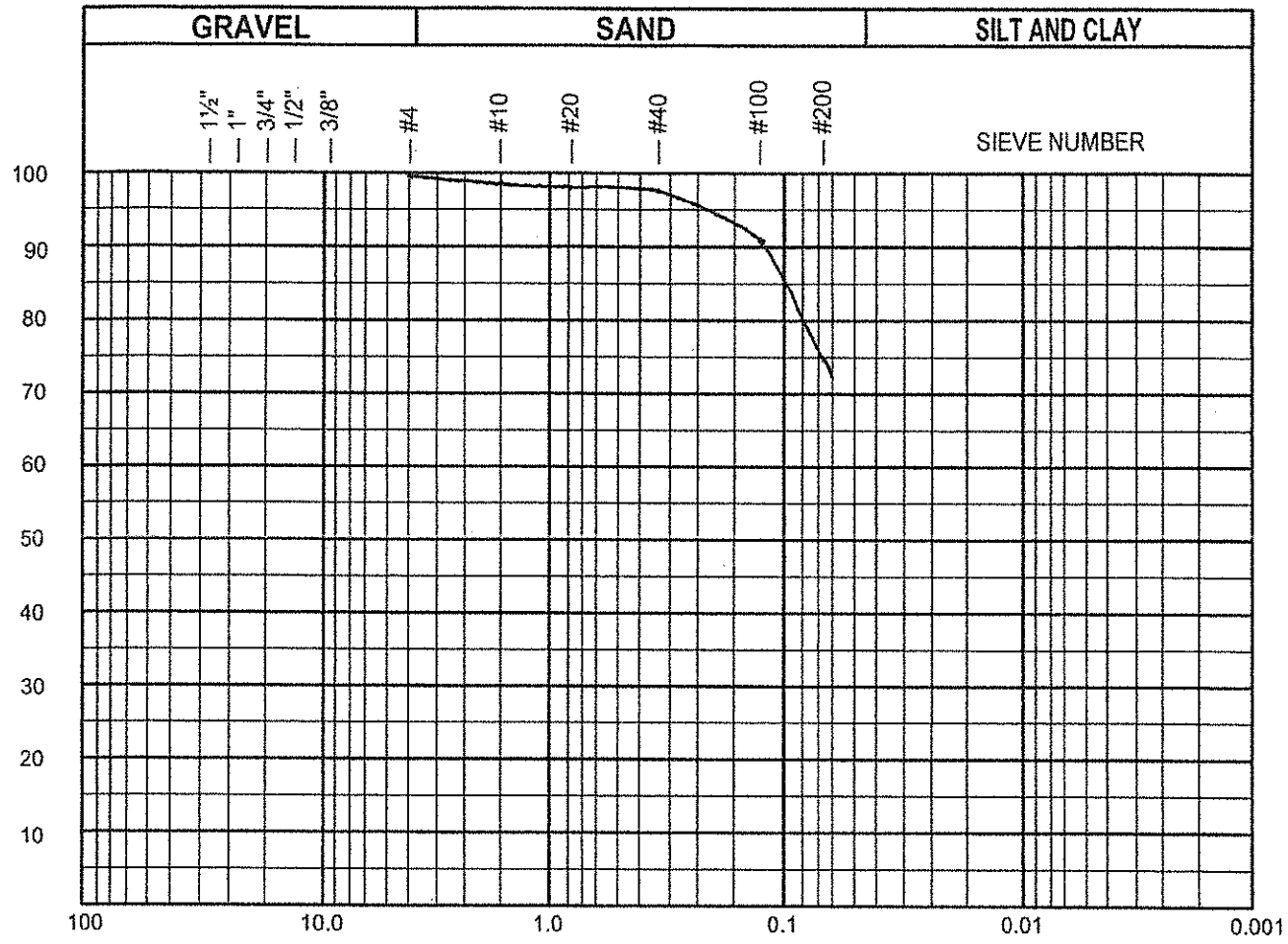
BACKHOE PIT LOGS

DRAWN	DATE	CHECKED	DATE
MSS			

STE
SOIL TESTING & ENGINEERING INC.

JOB No.
090210
FIG No.
14

CLIENT: GLEN INVESTMENT GROUP NO II	SOIL TYPE NO: FILL (PARCEL 1)
PROJECT: PARCEL 1, MINI STORAGE WAREHOUSE SITE	UNIFIED CLASSIFICATION: CL



SIEVE SIZE	% PASSING
1½"	
1"	
3/4"	
1/2"	
3/8"	100.0
# 4	99.5
# 10	98.8
# 20	98.2
# 40	97.1
# 100	91.3
# 200	74.9

SWELL

14.1	% MOISTURE AT START
20.5	% MOISTURE AT FINISH
6.4	% MOISTURE INCREASE
0.90	% VOLUME CHANGE
108.4	pcf INITIAL DRY DENSITY
2556	psf SWELL

ATTERBERG LIMITS

LIQUID LIMIT:	48
PLASTIC LIMIT:	17
P. I.:	31

LABORATORY TEST RESULTS

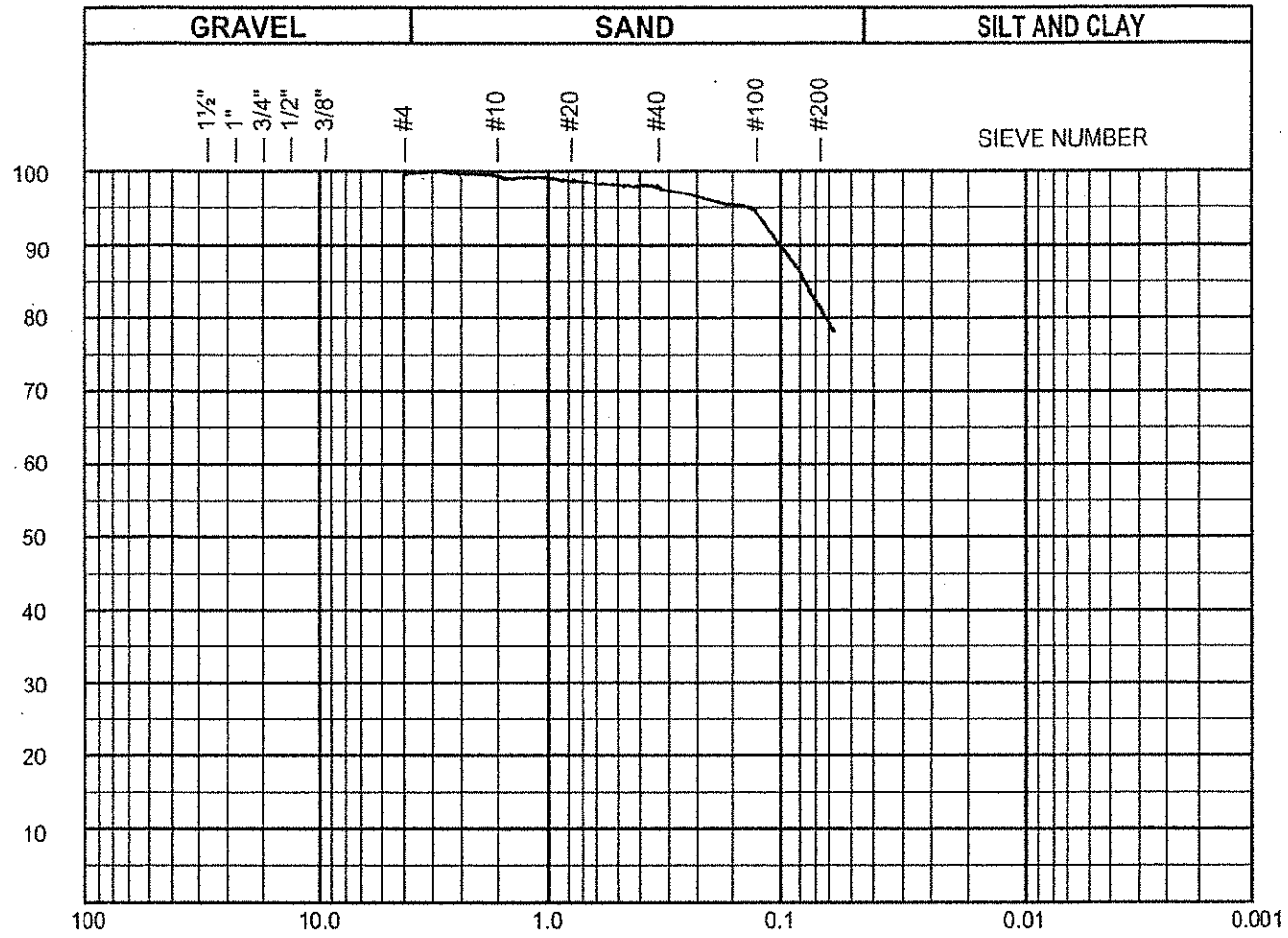
DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE

SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 15

CLIENT: GLEN INVESTMENT GROUP NO II	SOIL TYPE NO: FILL (EASTERN COMMERCIAL SITE)
PROJECT: PARCEL 1, MINI STORAGE WAREHOUSE SITE	UNIFIED CLASSIFICATION: CL



SIEVE SIZE	% PASSING
1½"	
1"	
3/4"	
1/2"	
3/8"	100.0
# 4	99.6
# 10	99.3
# 20	98.7
# 40	97.9
# 100	94.9
# 200	81.1

SWELL

14.8	% MOISTURE AT START
17.0	% MOISTURE AT FINISH
2.2	% MOISTURE INCREASE
0.08	% VOLUME CHANGE
109.8	pcf INITIAL DRY DENSITY
227	psf SWELL

ATTERBERG LIMITS

LIQUID LIMIT:	33
PLASTIC LIMIT:	15
P. I.:	18

LABORATORY TEST RESULTS

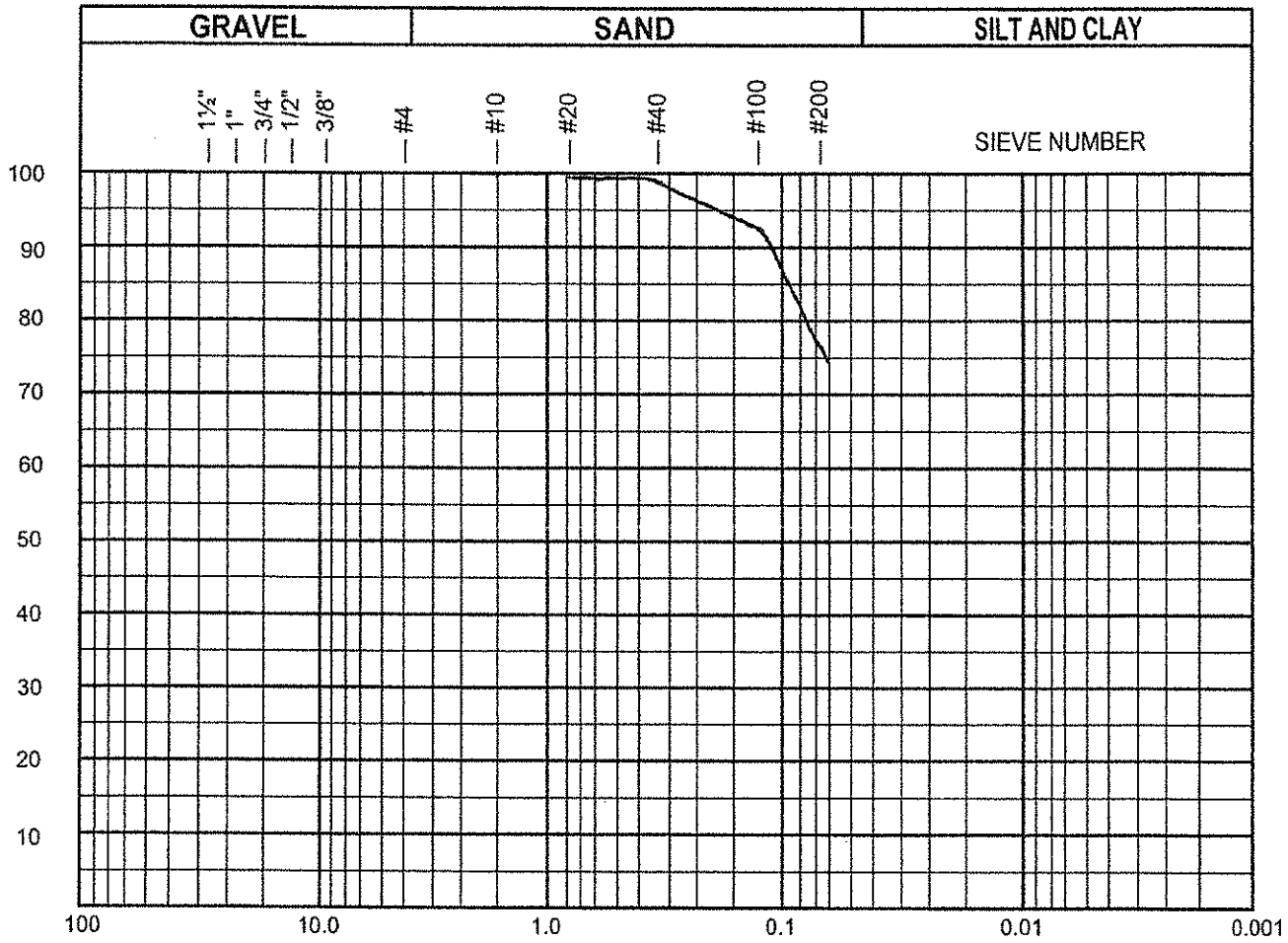
DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE

SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 16

CLIENT: GLEN INVESTMENT GROUP NO II	SOIL TYPE NO: 2 (VISUALLY CLASSIFIED AS TYPE 4 FROM PREVIOUS REPORT)
PROJECT: PARCEL 1, MINI STORAGE WAREHOUSE SITE	UNIFIED CLASSIFICATION: CL



SIEVE SIZE	% PASSING
1½"	
1"	
3/4"	
1/2"	
3/8"	
# 4	100.0
# 10	99.9
# 20	99.8
# 40	99.0
# 100	93.8
# 200	76.2

ATTERBERG LIMITS

LIQUID LIMIT: 34
PLASTIC LIMIT: 15
P. I.: 19

SWELL

11.2	% MOISTURE AT START
22.5	% MOISTURE AT FINISH
11.3	% MOISTURE INCREASE
0.71	% VOLUME CHANGE
101.4	pcf INITIAL DRY DENSITY
1583	psf SWELL

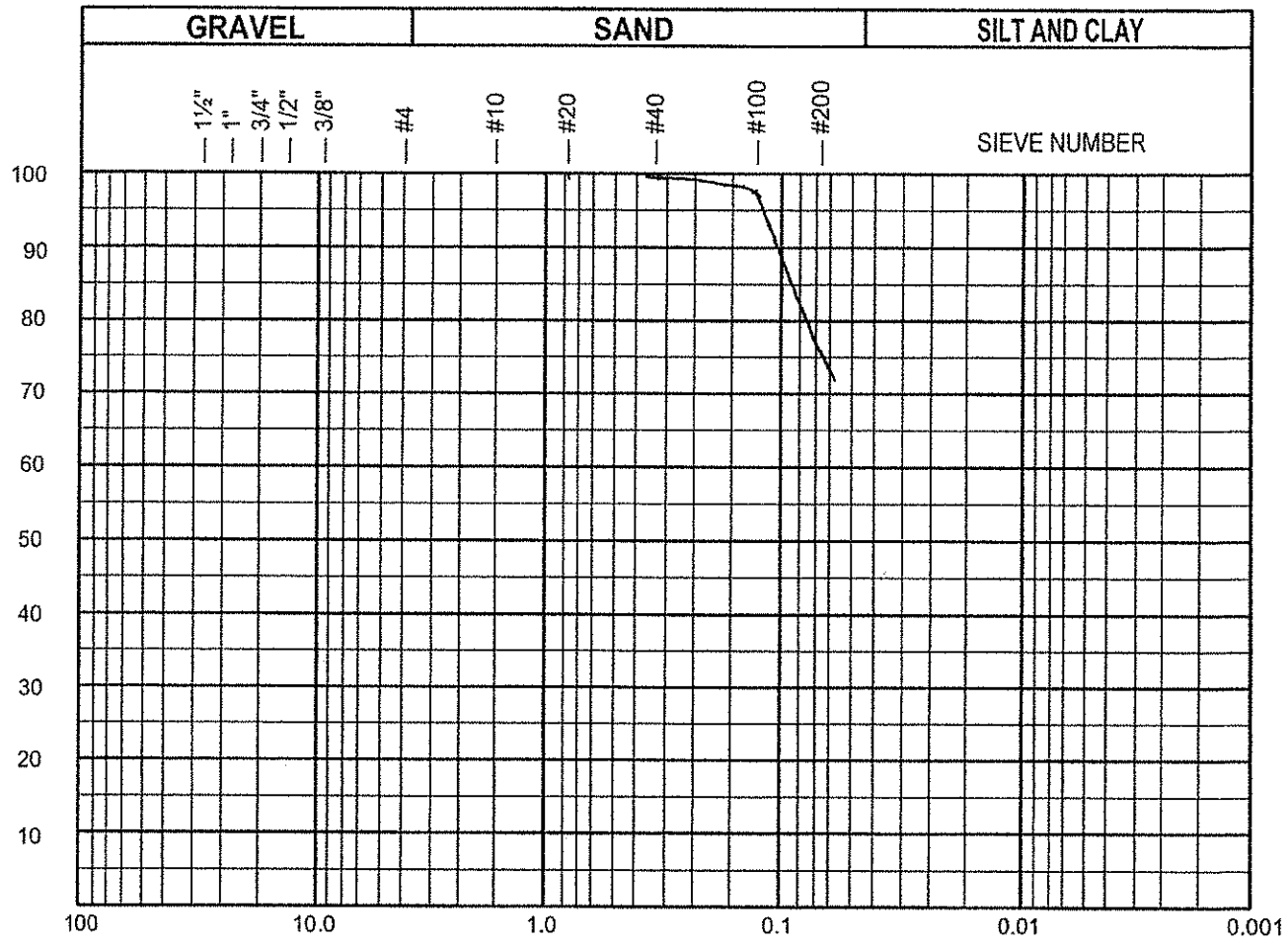
LABORATORY TEST RESULTS

DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE
SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 17

CLIENT: GLEN INVESTMENT GROUP NO II	SOIL TYPE NO: 4 (CLAYSTONE BEDROCK)
PROJECT: PARCEL 1, MINI STORAGE WAREHOUSE SITE	UNIFIED CLASSIFICATION: CL



SIEVE SIZE	% PASSING
1½"	
1"	
3/4"	
1/2"	
3/8"	
# 4	
# 10	100.0
# 20	99.8
# 40	99.7
# 100	97.8
# 200	75.8

SWELL

9.8	% MOISTURE AT START
21.5	% MOISTURE AT FINISH
11.7	% MOISTURE INCREASE
0.95	% VOLUME CHANGE
106.1	pcf INITIAL DRY DENSITY
2119	psf SWELL

ATTERBERG LIMITS

LIQUID LIMIT:	35
PLASTIC LIMIT:	15
P. I.:	20

LABORATORY TEST RESULTS

DRAWN	DATE	CHECKED	DATE
MSS		LWC	

STE

SOIL TESTING & ENGINEERING INC.

JOB No. 090210
FIG No. 18

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10302 South Progress Way
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Fax: 303-841-7556
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PRELIMINARY GEOTECHNICAL INVESTIGATION
FOR PROPOSED DEVELOPMENT
THE GLEN AT WIDEFIELD
FILING NO. 7
WIDEFIELD, COLORADO

JOB NUMBER: 215292A

NOVEMBER 4, 2015

PREPARED FOR:
MR. J. RYAN WATSON
WIDEFIELD INVESTMENT GROUP
3 WIDEFIELD BOULEVARD
COLORADO SPRINGS, COLORADO 80911

TABLE OF CONTENTS

PURPOSE AND SCOPE OF STUDY

This report presents the findings of our preliminary geotechnical engineering study for the proposed residential development located at The Glen at Widefield, Filing No. 7. The site location is shown on Figure 1. The study was conducted to evaluate the potential influence of the site geology on the proposed development and to develop preliminary geotechnical engineering recommendations. The study was conducted in accordance with our agreement for professional engineering services to Widefield Investment Group dated September 9, 2015. Site specific geotechnical investigations should be conducted at each lot and within proposed roadways to determine the appropriate foundation type and construction considerations of each individual residence planned.

A review of prior geotechnical investigations conducted by Soil testing and Engineering, Inc. has been conducted. The following reports have been reviewed:

1. Preliminary Subsurface Soil Investigation, Sunrise Ridge, Phase II, Colorado Springs, Colorado, Job Number 80415, and Dated June 10, 1998
2. Preliminary Subsurface Soil Investigation, Marksheffel Road and Peaceful Valley Road, Job Number 90235, and Dated May 5, 1999
3. Preliminary Subsurface Soil Investigation, The Glen at Widefield, Filing 7, Widefield, Colorado, Job Number 060933, and dated April 16, 2007.

Additionally, the mapped geology shown in the following map was consulted:

1. Scott, G.R., Taylor, R.B., Epis, R.C., and Wobus, R.A., 1976, Geologic map of the Pueblo 1 degree x 2 degrees quadrangle, south-central Colorado: U.S. Geological Survey, Miscellaneous Field Studies Map MF-775, scale 1:187,500

In addition to the review of the available information listed above, a field exploration program consisting of a site reconnaissance and nine borings was conducted to obtain general information on subsurface conditions. Samples from the borings were tested in the laboratory to determine their engineering characteristics. The previous reports, along with the results of our geologic observations, field exploration, and laboratory testing were analyzed to develop a report on the potential geologic hazards and preliminary geotechnical recommendations. This report summarizes the data obtained during the study and presents our conclusions and preliminary recommendations.

PROPOSED DEVELOPMENT

We understand that this project is part of a larger proposed residential development to be located in the vicinity west of Marksheffel near the intersection with Peaceful Valley Road in El Paso County, Colorado. The scope of this study is limited to the area bound by Marksheffel Road to the east, The Fountain Corporate Boundary to the North (the northern border of Section 22, Township 15 South, Range 65 West), and the rerouted gas line easement to the west and south. This portion of the project has an area of about 53.5 acres, and will potentially include about 185 single family residences and 1.6 miles of roadway. We understand that the houses in this area will be single story units with no basements. As mentioned above, site specific geotechnical studies should be conducted after final grading and platting has been established.

SITE CONDITIONS

The project area is located to the northeast of the intersection of Marksheffel Road and Peaceful Valley Road. A detailed description of the project boundaries was given in the above section. In general, the western portion of the site is located on a ridge extending south. The ground slopes moderately to the east in this area. The eastern portion of the site (approximately 2/3 of the area) is flat with a very mild slope to the east. Based on the available USGS topographic maps, the elevation varies across the site from about 5680 to 5720 feet MSL. Jimmy camp creek is located about 1,200 feet east of the site at its nearest point.

The majority of the site was vacant at the time of our investigation, but several small well houses are located near the northwest corner, which will be outside of the considered development. Overhead power lines run along the east and north sides of the site. Vegetation on the site consists mostly of weeds and grass with some small deciduous trees, and prairie dog holes were noted throughout. A irrigation ditch was noted at the toe of the slope separating the ridge from the flatter area. Peaceful Valley Country Club Estates (Filing 1), is located just east of the project site.

FIELD EXPLORATION

The field exploration for this project was conducted on September 23 and 24, 2015. Nine exploratory borings were drilled with an all-terrain CME 550X drill rig equipped with an automatic hammer to evaluate the subsurface conditions in the soils. The boring locations are shown in Figure 2. The exploratory borings were logged by a representative of Hepworth-Pawlak Geotechnical, Inc.

Samples of the soils were taken with a nominal 2-inch I.D. California spoon sampler and 1-3/8 inch I.D. split spoon sampler. The samplers were driven into the subsoils at various depths with blows from a 140-pound hammer falling 30 inches. This test is similar to the standard penetration test described by ASTM Method D-1586. The penetration resistance values are an indication of the relative density or consistency of the subsoils. Depths at which the samples were taken and the penetration resistance values are shown on the Boring Logs, Figure 3 and 4. The samples were returned to our laboratory for review by the project engineer and testing.

SUBSURFACE CONDITIONS

GENERAL

Under a thin layer of topsoil up to about 1 foot thick, four major subsurface materials were identified in our investigation. These include sandy clay, clayey sand, silty sand, and claystone bedrock. Claystone was encountered at relatively shallow depths along the west side of the site, and dropped off steeply towards the east side, where it was encountered at depths of over 50 feet below the existing ground surface. A detailed discussion of each soil/bedrock type encountered follows.

Sandy Clay (CL):

Sandy clay was found under the topsoil in all nine borings and extended to depths of about 4 to 35 feet below the ground surface. Sandy clay cover was generally shallower at the west side of the site. The sandy clay was medium stiff to very stiff, with an average penetration resistance blow count of 15 that ranged from 6 to 38 blows required for 12 inches of sampler penetration. Swell-compression test results indicate the sandy clay has

a low to very high swell potential based on vertical expansion ranging from 0.3 to 9.1 percent under a surcharge of 1 ksf when wetted.

Clayey Sand (SC):

Clayey sand was encountered under the sandy clay in all Borings except Borings B-3 and B-4. The clayey sand was found to be loose to medium dense, with an average penetration resistance blow count of 11 that ranged from 6 to 18 blows required for 12 inches of sampler penetration. The clayey sand encountered was generally wet, and the samples tested had an in situ water content that ranged from 26.9 to 31.5 percent.

Silty Sand (SM):

Slightly silty to silty sand with some gravel was encountered below the clayey sand in all Borings except Borings B-3 and B-4. The silty sand was found to be medium dense to dense, with an average penetration resistance blow count of 26 that ranged from 13 to 42 blows required for 12 inches of sampler penetration. In situ water content ranging from 10.0 to 12.7 percent was recorded in the samples tested.

Claystone:

Claystone was found at depths as shallow as 4 feet below the ground surface at the west side of the site, and as deep as 53 feet elsewhere. It was generally hard to very hard, with an average penetration of 5½ inches after 50 blows. The sample of claystone taken at 4 feet at Boring B-4 was softer, with a blow count of 31 for 12 inches of sampler penetration.

LABORATORY TESTING:

Laboratory testing included moisture content, unit weight, Atterberg limits, sieve analysis, percent passing #200 sieve, swell-compression, and water soluble sulfate concentration. Detailed results of swell-compression testing are shown on Figures 6-13 and gradation analyses on Figures 14 and 15. Test results are shown on the boring logs, Figures 3 and 4, and are summarized in Table 1

The concentration of water-soluble sulfates in the samples tested ranged from 0.065 to 0.813 percent. According to the Portland Cement Association's publication "Design and Control of Concrete Mixtures, 14th Edition" sulfate concentrations between 0.2 and 2.0 percent represent a severe sulfate exposure to concrete. To limit the effects of sulfate attack, Type V concrete is recommended. Additionally, a water to cementitious material ratio not exceeding 0.42 is recommended.

GROUNDWATER:

Groundwater was generally found at a depth of about 20 feet below the ground surface when measured several days after drilling. The table below lists the specific depths at which ground water was encountered.

Boring	Water Depth at time of Drilling	Water Depth Several Days After Drilling	Cave Depth
B-1	(no water found)	21 feet	21.5 feet
B-2	22 feet	20 feet	20 feet
B-3	(no water found)	(no water found)	19 feet
B-4	(no water found)	(no water found)	14 feet
B-5	(omitted from drilling program)		
B-6	15 feet	(no water found)	20 feet
B-7	22 feet	22 feet	22 feet
B-8	(no water found)	22 feet	24 feet
B-9	44 feet	21 feet	22 feet
B-10	(no water found)	22 feet	26 feet

Our review of previous studies conducted by STE indicate that groundwater depths were significantly shallower in the past. Perched groundwater and water contained in lenses of relatively permeable sands within less permeable clays are likely to be encountered.

It is anticipated that the depth to ground water will fluctuate with time based on seasonal, climatic, and other factors including irrigation.

GEOLOGIC SITE ASSESSMENT

The geologic formations in the vicinity of the project area include Quaternary Piney Creek Alluvium, Colluvium, and Pierre Shale below a thin layer of colluvium on the western side of the proposed development. Geologic hazards include moisture sensitive soils.

MOISTURE SENSITIVE SOILS

Our laboratory testing shows that the clay layers and the Pierre Shale have a medium to very high expansion potential when wetted and some of the soils have a collapse potential. These conditions must be considered in the design of building foundations and road pavements. The previous reports issued by STE have noted the hazards and some of our borings have encountered them. Both compression and swell can be remediated by removal and replacement with suitable material. For the clay, replacement at moisture contents above optimum is a common method. More detailed exploration and testing is required to better define the limits and their effect on the development.

EARTHQUAKE CONSIDERATIONS

The project area could experience earthquake related ground shaking. Modified Mercalli Intensity VI ground shaking should be expected during a reasonable exposure time for the development, but the probability for stronger ground shaking is low. Intensity VI ground shaking is felt by most people and causes general alarm, but results in negligible damage to structures of good design and construction. Occupied structures should be designed to withstand moderately strong ground shaking with little or no damage, and not to collapse under stronger ground shaking. According to the 2003 IBC and local codes, the property is considered to be Site Class C where the overburden is less than 15 feet and Site Class D where the overburden is greater than 15 feet. The Seismic Design Category is considered to be B.

ENGINEERING ANALYSIS

Because of the relatively large area considered within the proposed development, different conditions were identified within different areas of the site. At the western portion, expansive clay over shallow expansive claystone will be the dominant subsurface materials encountered at the anticipated foundation levels. Overburden consisting of

collapsible to expansive soils will encountered throughout the remainder of the site. Though no exceedingly soft/loose areas were identified in our study, such conditions have been identified in past studies, and it is possible that areas requiring significant remediation will be identified when site specific studies are conducted. Particularly, if shallow groundwater is identified, additional fill placement may be necessary to elevate foundations to a suitable distance from the groundwater.

Generally, the moisture sensitive soils should be remediated under all roadways, utility infrastructure, paved walks, drives, and flatwork, and under foundations. This can be accomplished in large part by removing, moisture conditioning, and replacing the existing soils in controlled compacted lifts. Unsuitable material, which includes the expansive claystone bedrock and some highly expansive clay should not be used below foundations. Because of the shallow depth of the bedrock along the western portion of the site, deep foundations, such as drilled piers may be a more cost effective option than over-excavation and replacement. In areas where the existing expansive material is replaced with a more permeable granular material, a toe drain at the base of the fill will be necessary to prevent the accumulation of surface water at this interface.

Structural floors built above crawlspaces will perform the best in the moisture sensitive soils encountered, but if the increased risk of slab movement can be tolerated, on-grade slabs can be used for the garage areas provided the area below has been over-excavated and replaced with suitable material. A more detailed discussion of floor types has been provided in the *Floors* subsection of the *Preliminary Design Recommendations* section below.

We recommend that the potential homeowner be supplied with, read and follow the recommendations presented in the Colorado Geologic Survey's Special Publication 43 "Home Landscaping and Maintenance on Swelling Soil". This publication provides a thorough description of the construction of homes on expansive soil, and includes information about the additional maintenance and care required for such homes. In particular, information about surface drainage and irrigation should be reviewed.

Because high concentrations of water soluble sulfates were found, special cement will likely be necessary for concrete in contact with the native soils. Because special cement could potentially add substantial construction costs, additional testing during the site specific investigations is recommended to determine the extent of these high concentrations.

Roadways will require subgrade improvement, which could be accomplished via over-excavation and replacement, and/or the use of geogrid below the pavement section. Lime stabilization of the native soils with high sulfate concentrations is not recommended due to the potential formation of calcium-sulfate-aluminate-hydrates, and the soil heave associated with the formation of these crystalline compounds.

PRELIMINARY DESIGN RECOMMENDATIONS

Based on the subsurface conditioned encountered, and our understanding of the proposed development, the following preliminary design recommendations have been provided.

SITE GRADING

We anticipate relatively shallow cuts and fills. We should have the opportunity to review construction plans for consistency with our recommendations.

Site Preparation:

The following preliminary recommendations should be observed for site preparation.

1. Permanent cut and fill slopes should be no steeper than 3:1 (horizontal to vertical). Any man-made slopes higher than 10 feet should be evaluated for slope stability.
2. All unsuitable organic material, debris or soft soils should be removed from areas to receive fill. This applies particularly to the placement of fill on slopes. If grading creates any slope steeper than 4 horizontal to 1 vertical, the ground should be benched to provide a relatively level surface for compaction. The exposed soils should be scarified, moisture conditioned, and compacted to the same density as the overlying fill.

3. All fill and backfill should be approved by the geotechnical engineer, placed in uniform lifts with a thickness compatible with the type of compaction equipment being used, moisture conditioned within 0 to +3 percent of optimum moisture content for the clay soil, and ±2 percent of optimum for the sand soils. The soils should be compacted with the appropriate equipment for the lift thickness used. The following minimum percentages of the maximum dry density, as determined by ASTM D698 (standard Proctor), are considered suitable for the anticipated development.

    a) Below foundations.....95%
    b) Below slabs and pavements.....95%
    c) Landscaped area fill.....90%
    d) Retaining or Foundation Wall Backfill.....95%

Suitability of On-Site Soil:

The clay soils encountered in the borings were found to have a relatively high swell potential at their in-situ moisture content and density, and will likely be expansive when placed as fill. Moisture conditioning to optimum and above can reduce the swell potential, but will not eliminate the risk of heaving caused by expansive soils. For fills that contain these clay soils, we recommend Standard Proctor criteria (ASTM D698) as opposed to modified Proctor criteria (ASTM D1557), because its use generally yields fill at higher optimum moisture content at a lower density and hence a lower expansion potential. All soils proposed for use below slabs or foundations should be tested for suitability. Bedrock will not be suitable for placement under structures.

Borrow areas should be stripped and segregated so that the fill will be free of deleterious materials. The on-site soil should be processed so that the fill does not contain rock or soil fragments larger than 4 inches in diameter. Any soils imported to the site should be approved by the geotechnical engineer.

EXCAVATIONS:

The sandy clay overburden, and the bedrock encountered in our borings can be excavated with typical heavy duty excavation equipment. Relatively shallow excavations are

anticipated for the construction of the proposed residences, but deeper excavations may be required for utility trenches.

It is the responsibility of the Contractor to provide safe working conditions and to comply with the regulations in OSHA Standards, Excavations, 29CFS Part 1926. The on-site native clay will likely classify as "Type B" in accordance with OSHA regulations. The regulations allow slopes of 1:1 horizontal to vertical for Type B soils for temporary excavations less than 20 feet deep. Some of the hard native sandy clay and claystone or sandstone bedrock will classify as "Type A" in accordance with OSHA regulations. The regulation allows for slopes of ¾:1 for temporary excavations less than 20 feet deep. The native sands encountered below the clay will likely classify as "Type C" in accordance with OSHA regulations. The regulations allow slopes of 1½:1 horizontal to vertical (34°) for Type C soils for temporary excavations less than 20 feet deep. The presence of water, seepage, fissuring, vibrations or surcharge loads will require temporary excavation to have slopes flatter than those allowed by OSHA regulations. The Contractor's competent person should make decisions regarding cut slopes. A qualified Geotechnical engineer should observe any questionable slopes or conditions. Temporary shoring or trench boxes may be necessary. Trench cut slopes in cohesive soils and bedrock should stand at near vertical for a sufficient length of time to install any required temporary shoring unless adversely affected by groundwater seepage, vibrations or surcharge loads. Trenches cut in non-cohesive sand may not stand at a near vertical slope during the time required to install trench boxes, and these areas may require the trench to be sloped instead.

FOUNDATIONS

Considering the subsurface conditions encountered in our investigation and the nature of the proposed construction, either deep foundation systems or over-excavation and replacement should be utilized for proposed structures. Deep foundations consisting of typical drilled shaft piers will likely be suitable at the west side of the site. Helical piers bearing in the overburden materials will be necessary for areas where deep bedrock exists. Particularly in the east portion of the site, deep foundations will not likely be required if over-excavation and replacement is conducted.

These criteria are presented for preliminary planning purposes only. Actual design criteria should be established by drilling closely-spaced borings within each building footprint and performing laboratory testing.

FLOOR SLABS

Floor slabs present a difficult problem where expansive materials are near the proposed floor slab elevation because sufficient dead load cannot be imposed on them to resist the uplift pressure generated when the materials become wet and expand. The only positive method to control floor slab movement on these soils is to construct a structural floor system above a crawl space. The evaluation of mold hazards is beyond the scope of this study and H-P Geotech does not provide recommendations regarding mold mitigation.

Garage floors are subject to the same difficult soils conditions as described above, but are difficult to construct over crawlspaces due to the relatively high live loading conditions anticipated. Slab-on-grade construction can be used for the garage floors provided that the risk of distress resulting from floor slab movement is recognized and accepted by the builder/potential homeowner. In areas with high swell potential, over-excavation of the native soils, and replacement with suitable moisture conditioned soils will be required.

DRAINAGE

Underdrains

Though groundwater was found at relatively low elevations compared to those of the anticipated foundations, it has been known to be significantly higher in the past. Additionally, surface water infiltration due to storm events and irrigation will change the groundwater depth. Therefore, we recommend below-grade construction, including crawlspaces be protected from excessive wetting by an underdrain system. The drain also will act to prevent buildup of hydrostatic pressures behind foundation walls.

Surface Drainage and Erosion Control:

Moisture-sensitive and erodible subsoils were identified at this site. The satisfactory performance of foundations, floor slabs and pavements are directly related to positive surface and subsurface drainage systems to prevent subgrade wetting. Surface grades should be maintained such that irrigation, snowmelt and precipitation water will easily

run off away from the structures and pavement. A 10 percent slope adjacent to foundations is commonly used. Positive drainage away from all structures and roadways should be maintained.

Additionally, good surface drainage should be provided around all fill areas and cut slopes to direct surface runoff away from these areas. Slopes and other stripped areas should be protected against erosion by paving, re-vegetation or other means.

CONTINUING SERVICES

Two additional elements of geotechnical engineering service are important for the successful completion of this project.

1. Consultation with design professionals during the design phases. This is important so the intentions of our recommendations are properly incorporated in the design, and that any changes in the design concept properly consider geotechnical aspects. A design-level geotechnical study should be undertaken once siting and configuration of the project is final.
2. Observation and monitoring during construction. A geotechnical engineer from our firm should observe the excavation, earthwork, and foundation phases of the work to judge that subsurface conditions are compatible with those used in the analysis and design. During site grading, placement of fill should be observed and tested to confirm that the proper placement conditions have been achieved.

LIMITATIONS

This report has been prepared in accordance with generally accepted geotechnical engineering principles and practices in this area at this time. We make no warranty either express or implied. The conclusions and recommendations submitted in this report are based upon the data obtained from widely-spaced exploratory borings drilled at the locations indicated on Figure 2, the proposed type of construction and our experience in the area, and the review of previous studies conducted in the area. Our findings are preliminary in nature and include interpolation and extrapolation of the subsurface conditions identified at the exploratory borings and variations in the subsurface

conditions may not become evident until further exploration or excavation is performed. A site specific geotechnical study should be performed for each lot.

This report has been prepared for the exclusive use by our client for preliminary design purposes. We are not responsible for technical interpretations by others of our exploratory information which has not been described or documented in this report. As the project evolves, we should provide continued consultation and field services during construction to review and monitor the implementation of our recommendations, and to verify that the recommendations have been appropriately interpreted.

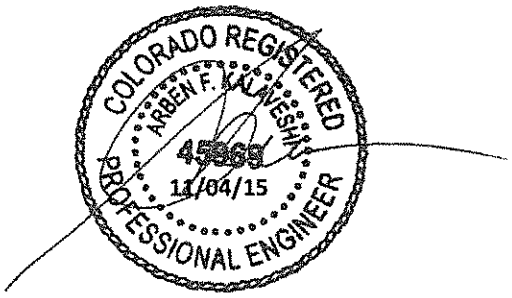
If you have any questions or if we can be of further service, please call. We appreciate the opportunity to have worked on this project.

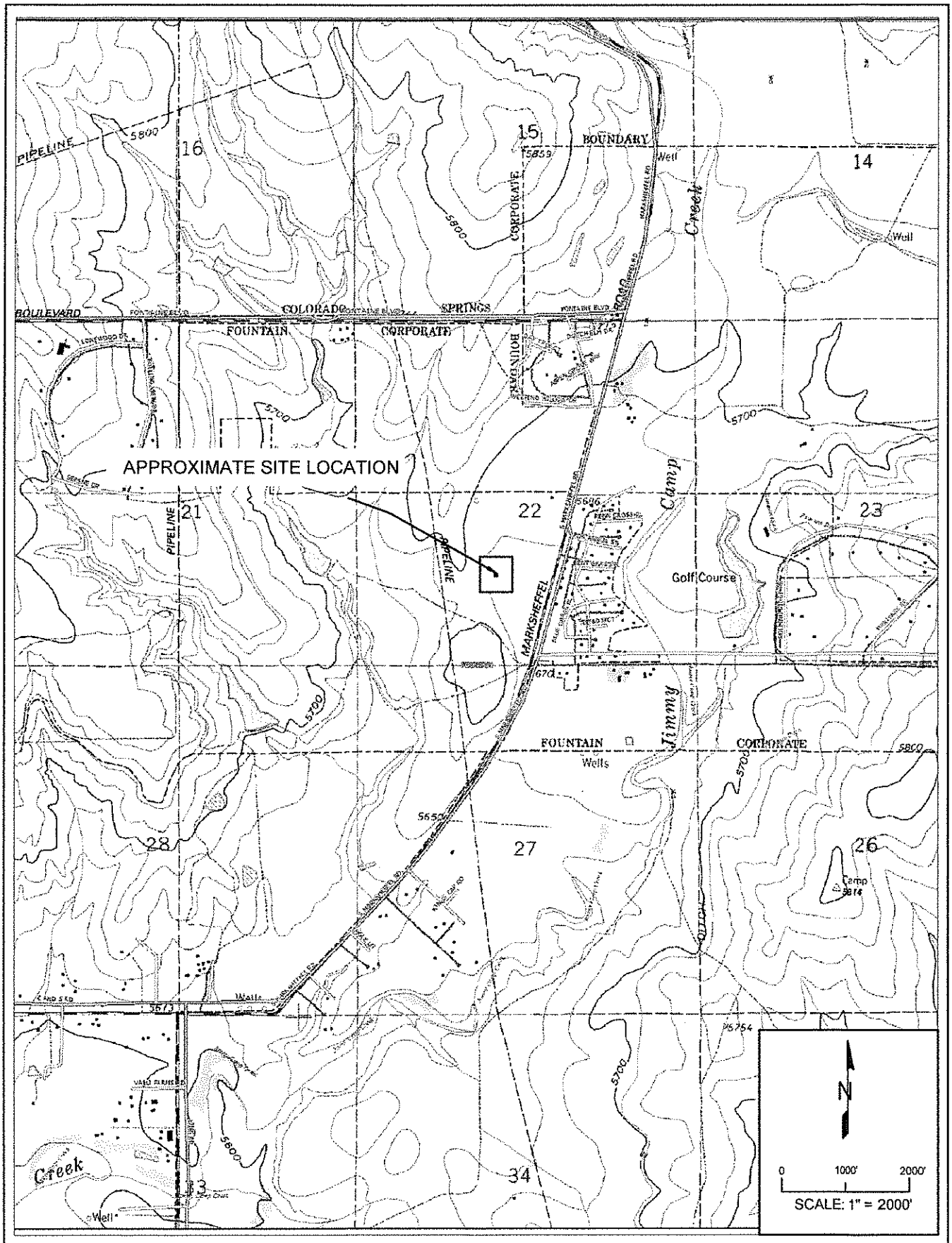
Sincerely,
HEPWORTH - PAWLAK GEOTECHNICAL, INC.

Cuong Vu, Ph.D., P.E.

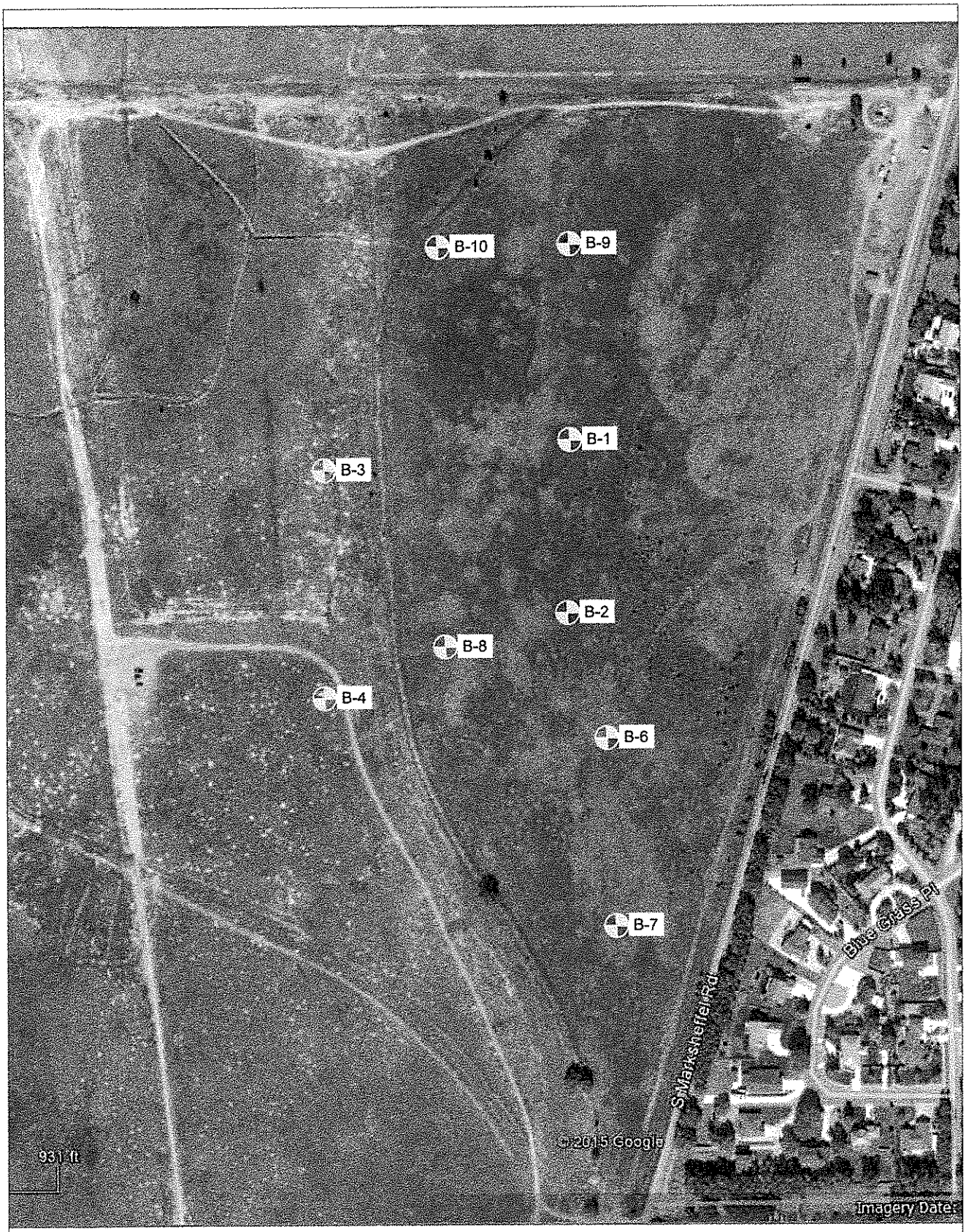
and

Arben Kalaveshi, P.E.

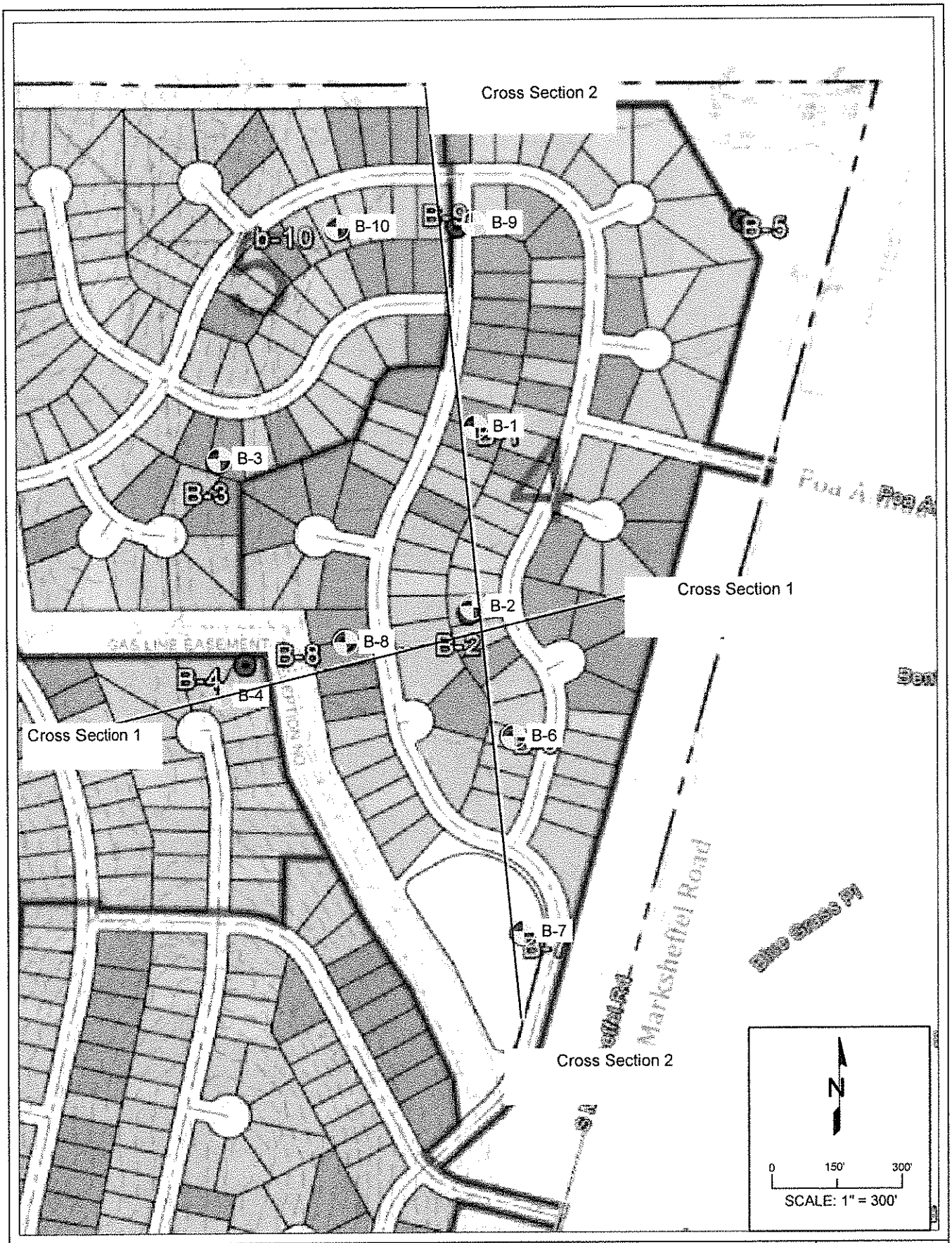




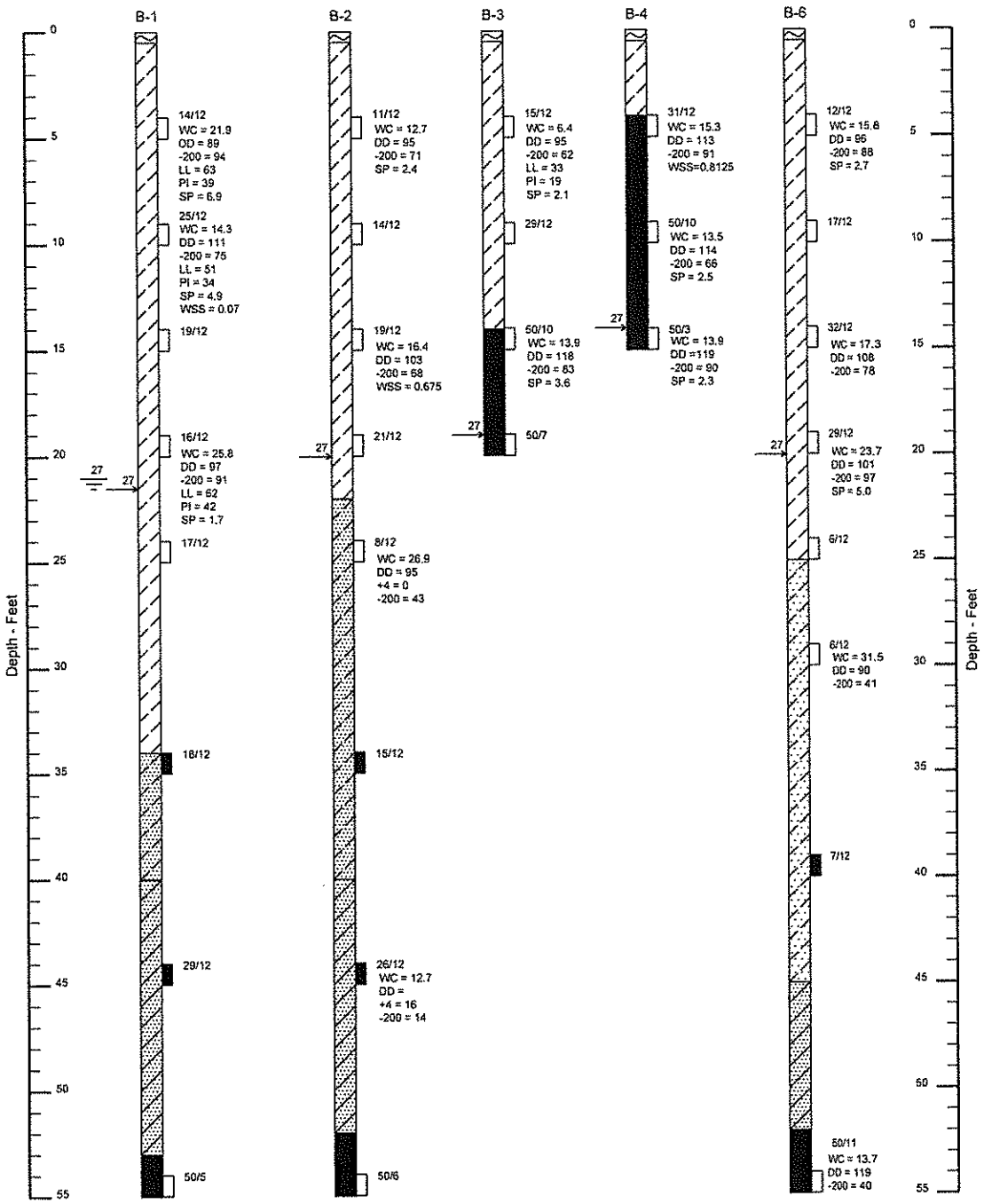
215292A	HEPWORTH-PAWLAK GEOTECHNICAL, Inc.	THE GLEN AT WIDEFIELD, FILING 7 SITE LOCATION	FIG. 1



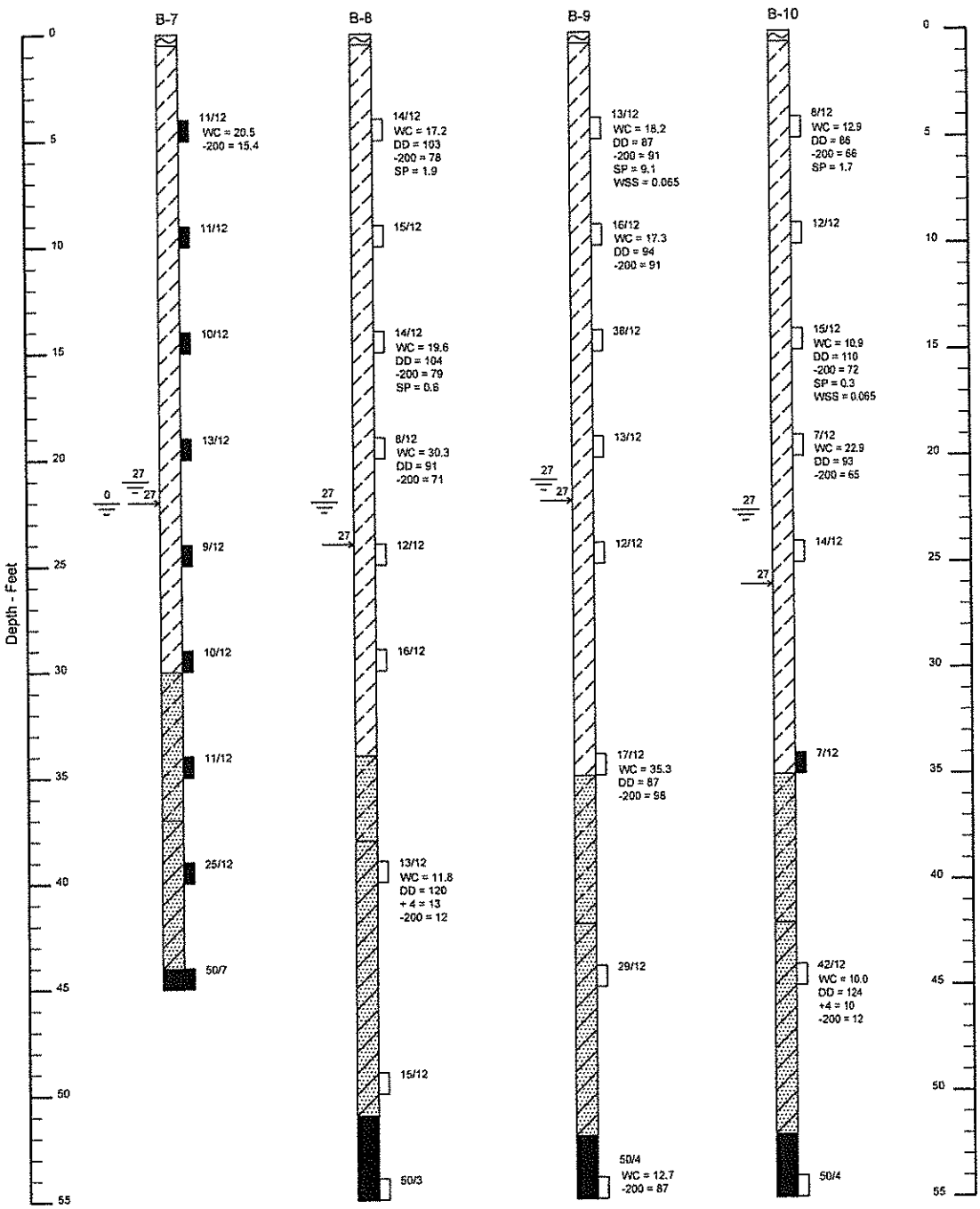
215292A	HEPWORTH-PAWLAK GEOTECHNICAL, Inc.	THE GLEN AT WIDEFIELD, FILING 7 BORING LOCATIONS	FIG. 2



215292A	HEPWORTH-PAWLAK GEOTECHNICAL, Inc.	THE GLEN AT WIDEFIELD, FILING 7 BORING LOCATIONS	FIG. 2a



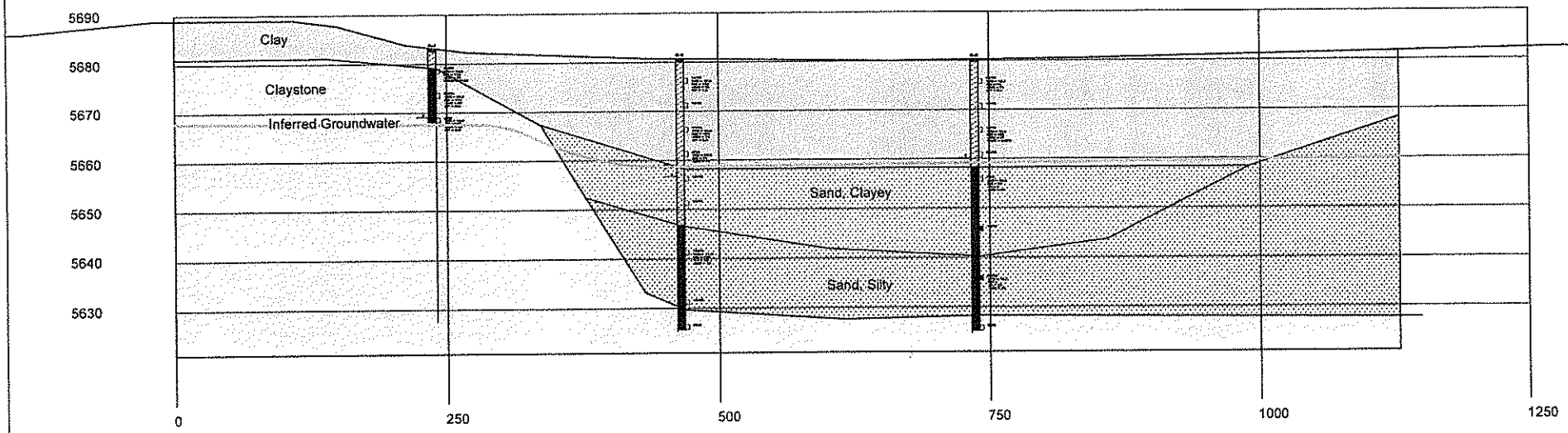
215292A	HEPWORTH-PAWLAK GEOTECHNICAL, Inc.	THE GLEN AT WIDEFIELD, FILING 7 BORING LOGS	FIG. 3



213116A	HEPWORTH-PAWLAK GEOTECHNICAL, Inc.	THE GLEN AT WIDEFIELD, FILING 7 BORING LOGS	FIG. 4

NOTES:

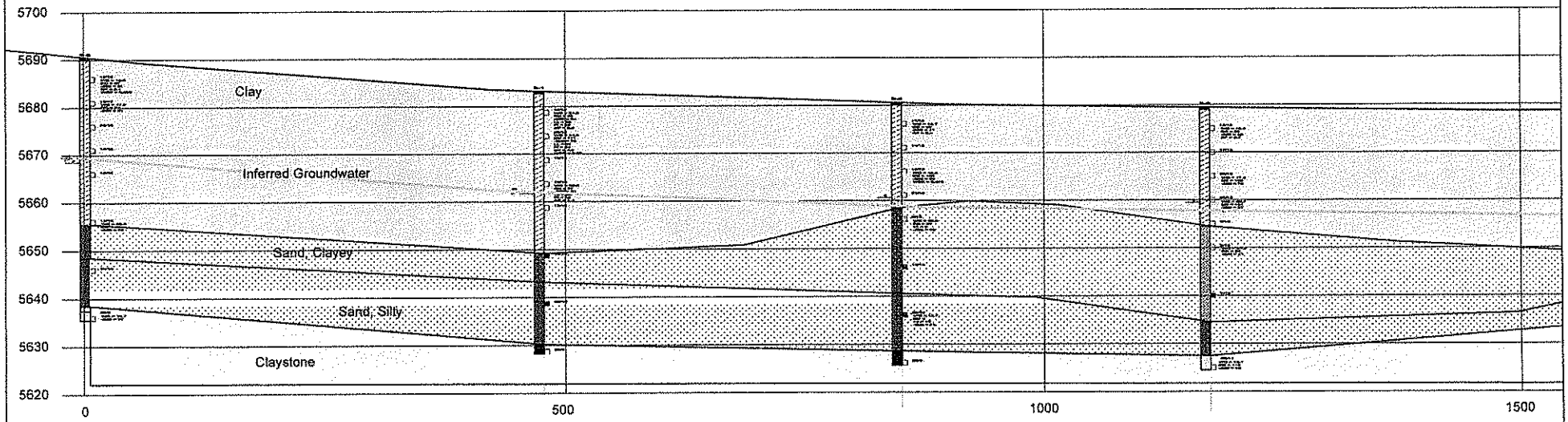
1. The materials shown and their boundaries have been inferred and interpreted from the boring data available and the surface conditions observed, and may differ from the actual subsurface conditions.
2. The surface topography end elevations are approximate.
3. The free water line shown is an extrapolation of the water level shown in boreholes when measured at least 1 day after drilling was completed.



215292A	HEPWORTH-PAWLAK GEOTECHNICAL, Inc.	THE GLEN AT WIDEFIELD, FILING 7 SOIL CROSS SECTIONS	FIG. 4A

NOTES:

1. The materials shown and their boundaries have been inferred and interpreted from the boring data available and the surface conditions observed, and may differ from the actual subsurface conditions.
2. The surface topography end elevations are approximate.
3. The free water line shown is an extrapolation of the water level shown in boreholes when measured at least 1 day after drilling was completed.



215292A	HEPWORTH-PAWLAK GEOTECHNICAL, Inc.	THE GLEN AT WIDEFIELD, FILING 7 SOIL CROSS SECTIONS	FIG. 5

LEGEND

TOPSOIL: Clay (CL), sandy, slightly moist to moist, brown, with grass/weed cover.

CLAY (CL), sandy, fine to medium grained, medium stiff to very stiff, medium plasticity, moist to wet, brown.

SAND (SC), clayey, fine to coarse grained, low plasticity, loose to medium dense, very moist moist to wet, brown.

SAND (SP-SM), silty, gravelly, fine to coarse grained, medium dense, moist, brown.

Claystone, fine grained, medium hard to very hard, moist, brown to blue.

Indicates 1⅜ inch I.D. Split Spoon sampler. 17/12 indicates 17 blows of a 140-pound hammer falling 30 inches were required to drive the sampler 12 inches.

Indicates 2-inch I.D. California sampler. 17/12 indicates 17 blows of a 140-pound hammer falling 30 inches were required to drive the sampler 12 inches.

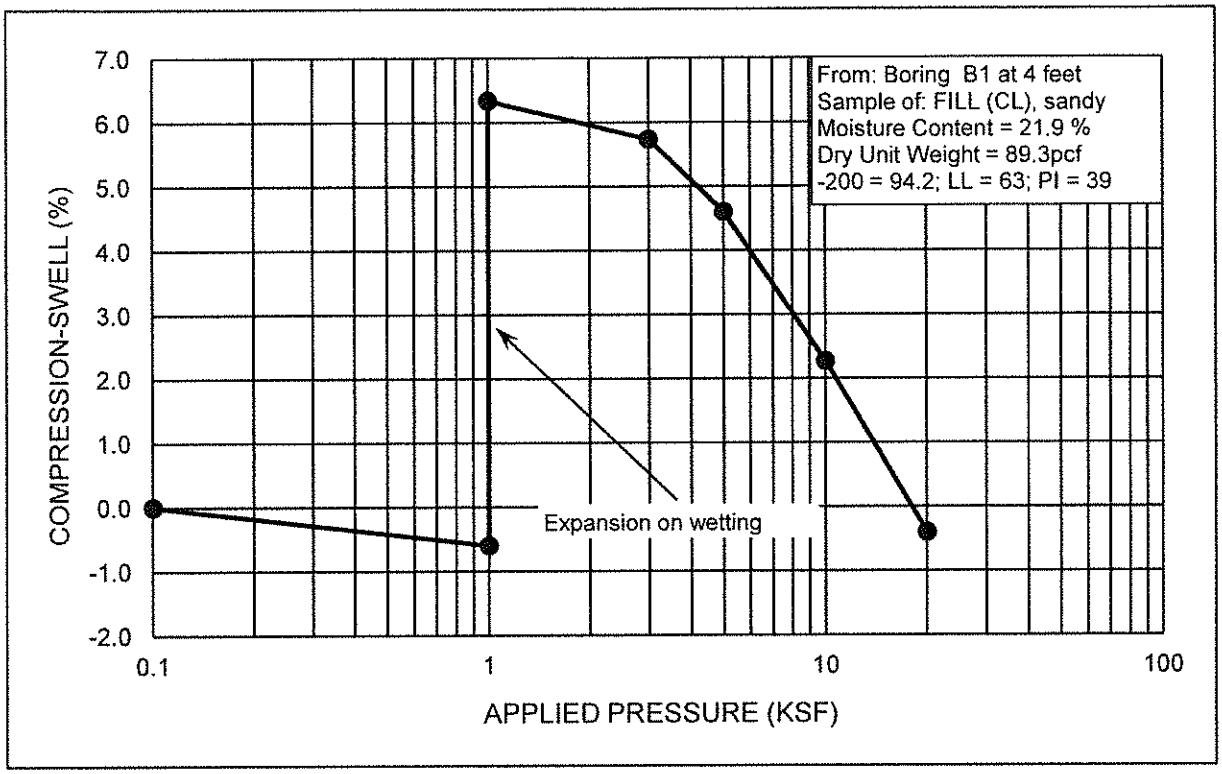
Indicates depth of cave and number of days after drilling measurement was made.

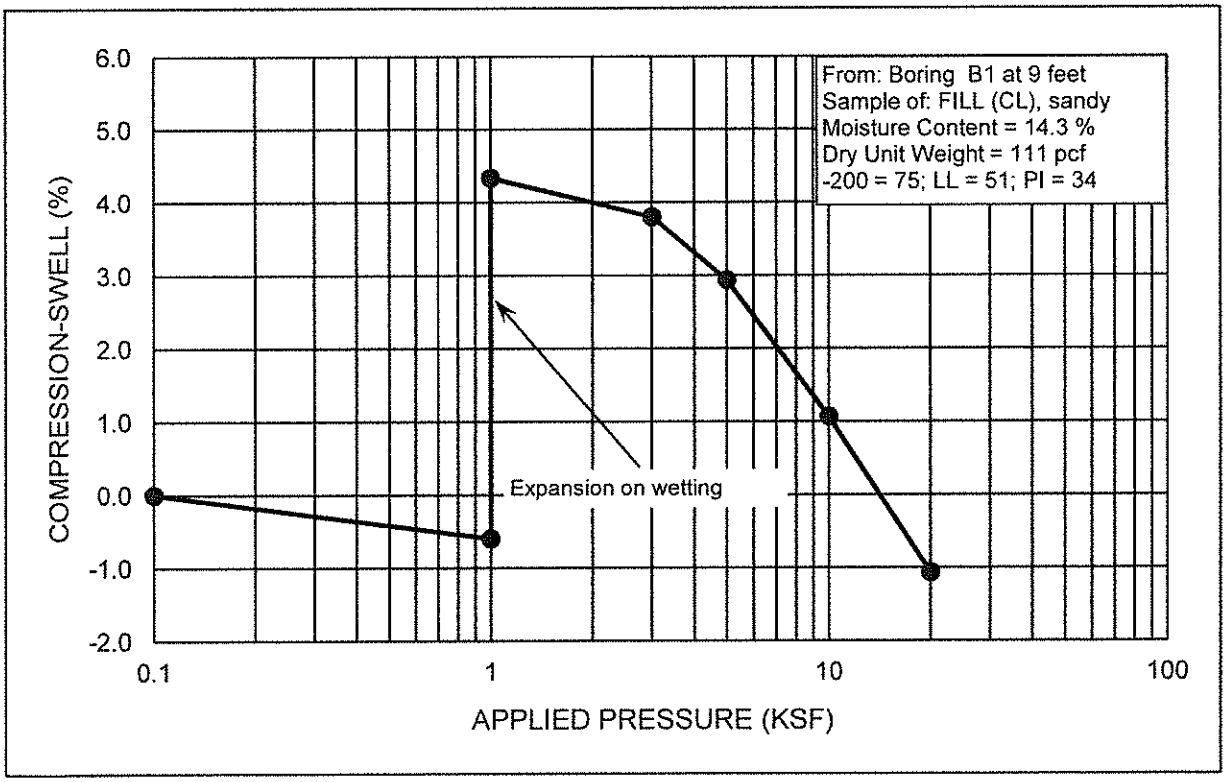
Indicates depth of free water and number of days after drilling measurement was made.

NOTES:

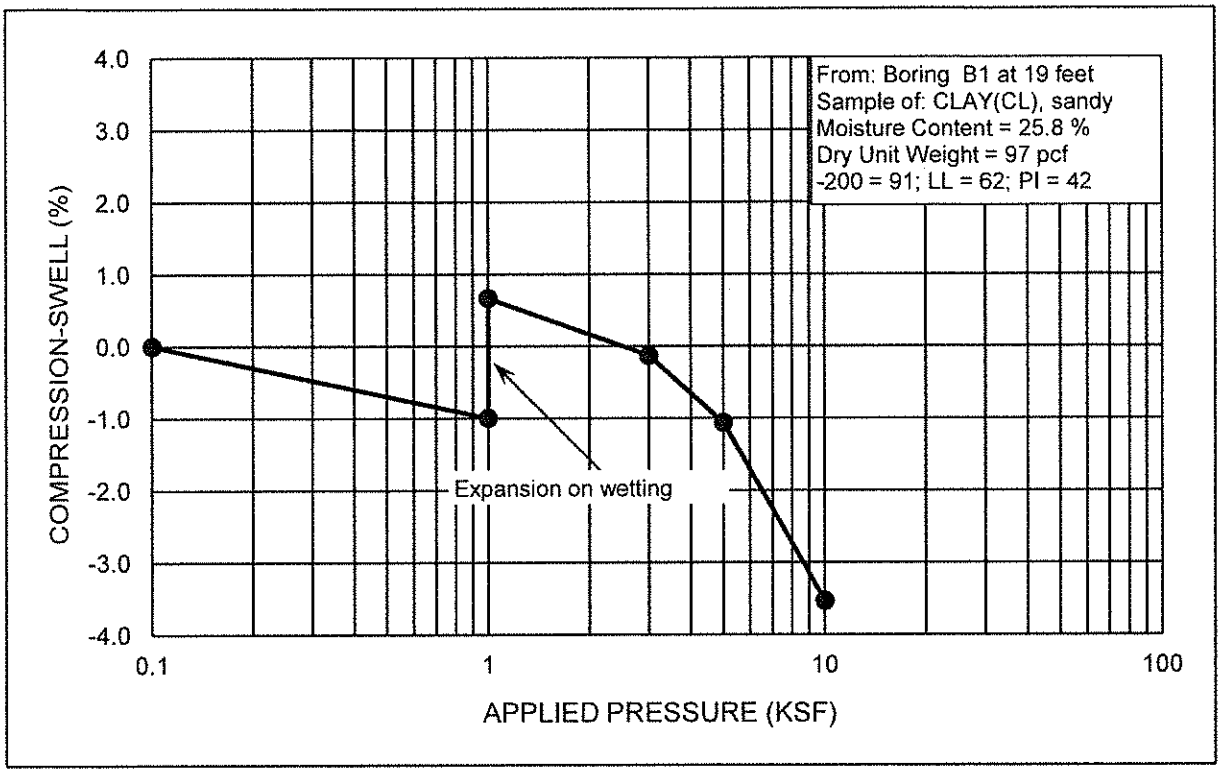
1. Field work was conducted on September 23 and 24, 2015. The Boring was drilled and sampled using a truck mounted CME 550X All Terrain Drill Rig.
2. Location of borings shown on Figure 2 are approximate.
3. Elevations of borings were not measured during our site visit.
4. The lines between strata represent approximate boundaries and transitions may be gradual.
5. Laboratory Testing Results:
   MC=Moisture content (%).
   DD=Dry density (pcf).
   +4 = Percent of gravel fraction
   -200 = Percent of silt and clay fraction.
   LL = Liquid limit.
   PI = Plastic index.
   SP = Percent swell under a surcharge of 1,000 psf when wetted.
   WSS = Water Soluble Sulfates in Percent.

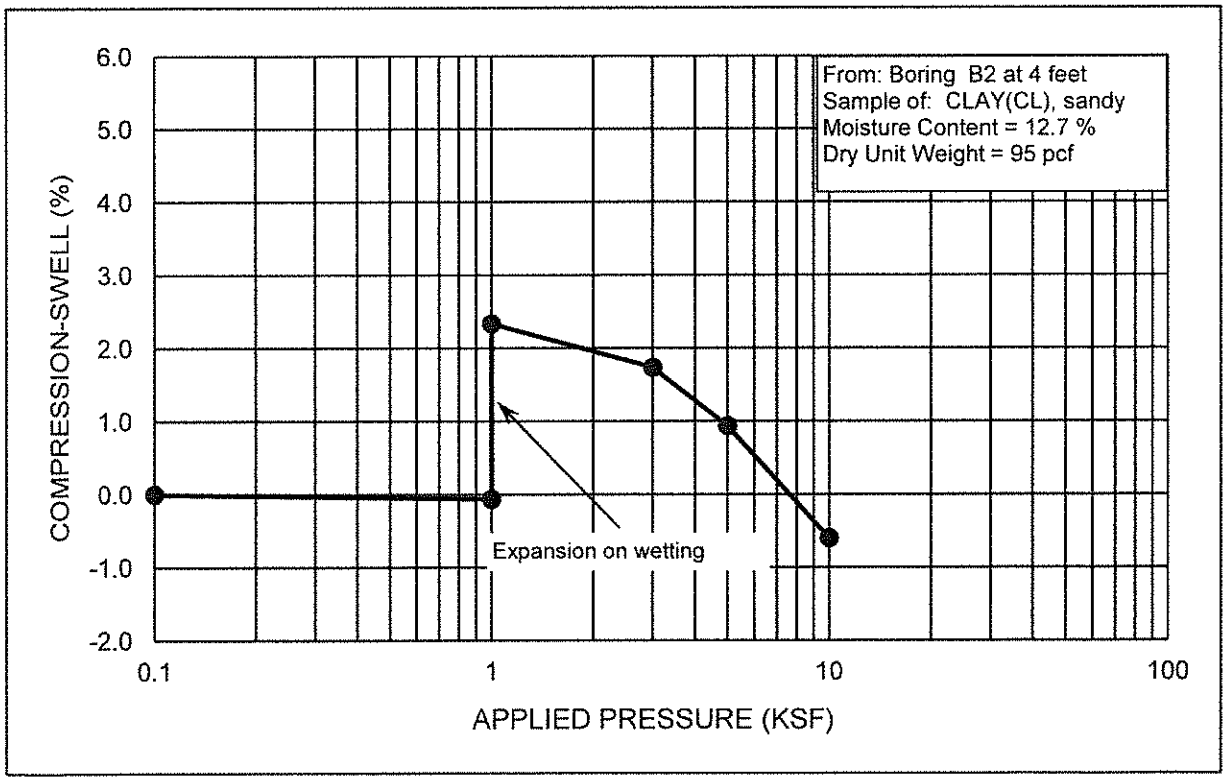
215292A	HEPWORTH-PAWLAK GEOTECHNICAL, Inc.	THE GLEN AT WIDEFIELD, FILING 7 LEGEND AND NOTES	FIG. 5



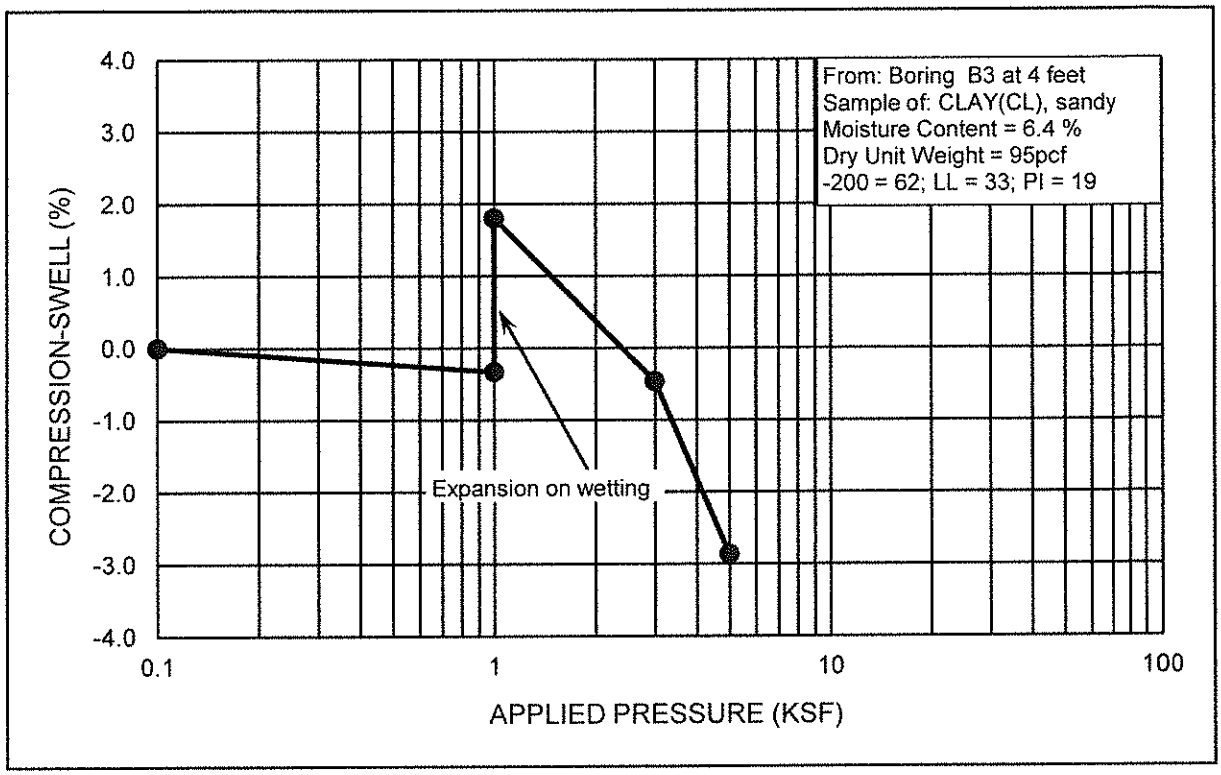


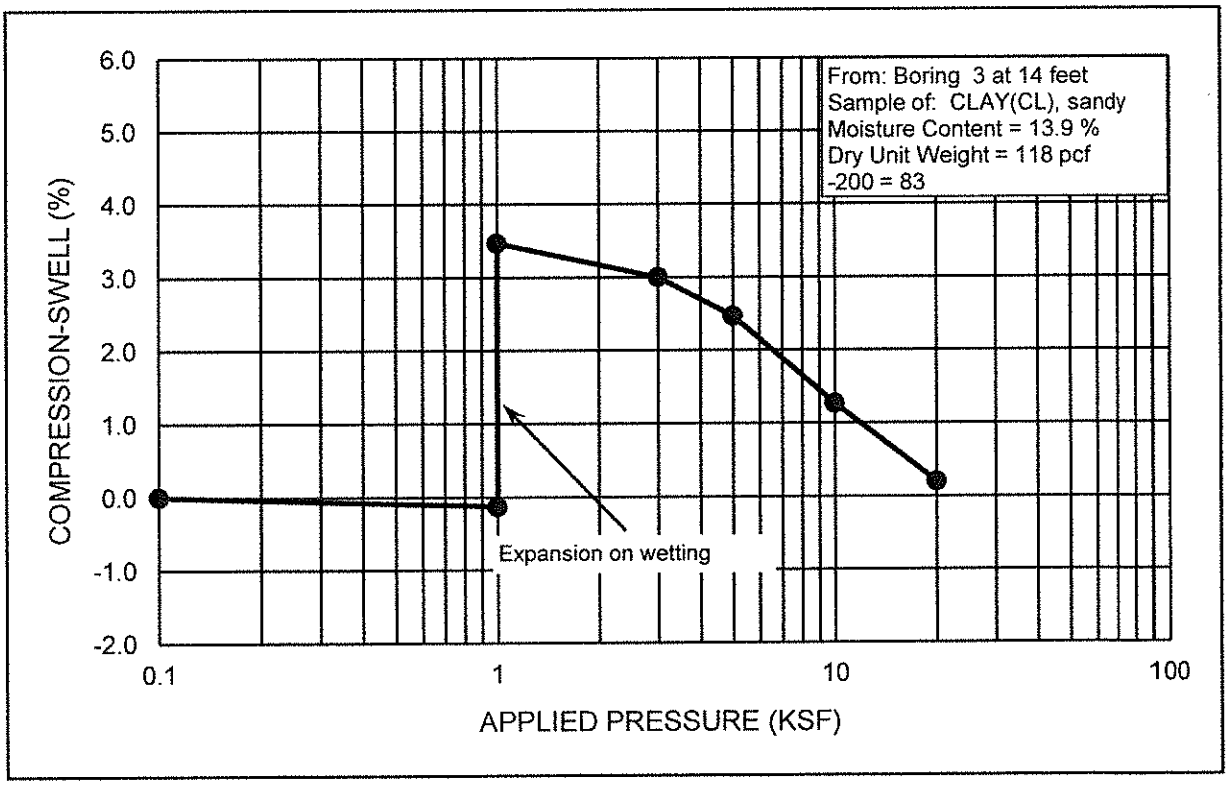
215292A	HEPWORTH-PAWLAK GEOTECHNICAL, INC.	WIDEFIELD SWELL-COMPRESSION TEST RESULTS	FIG. 6



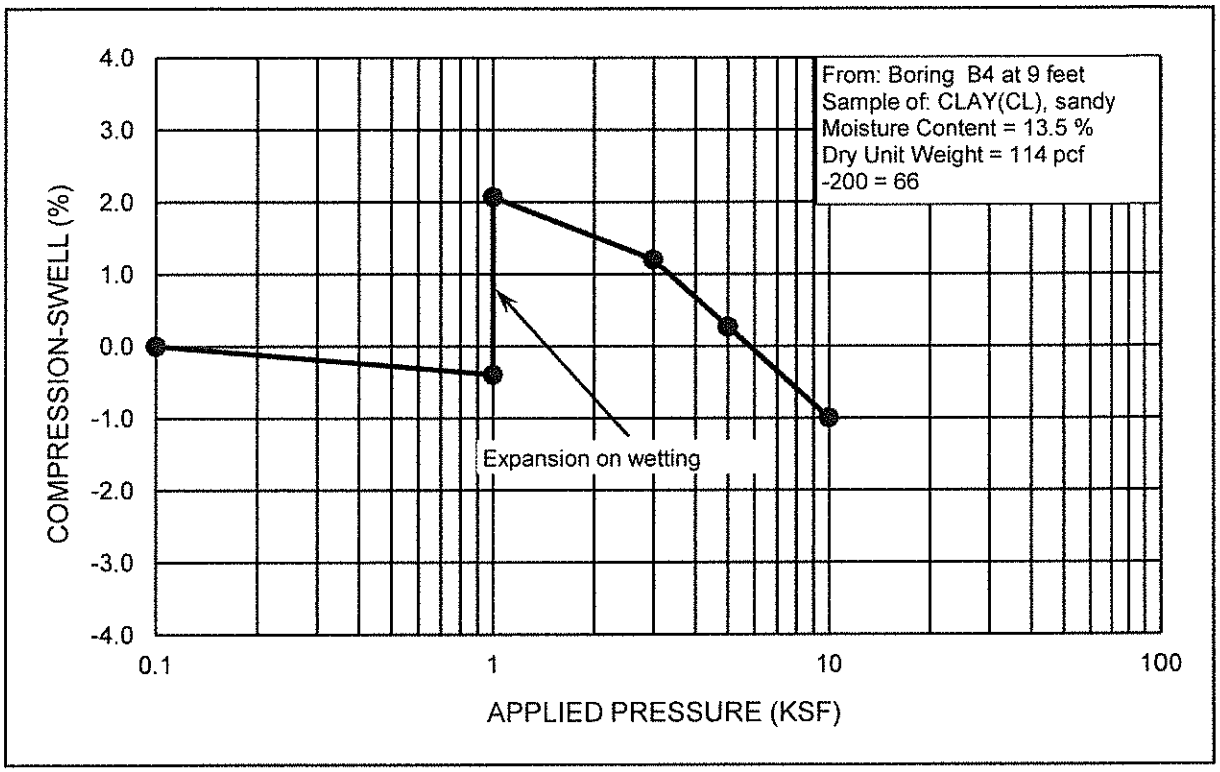


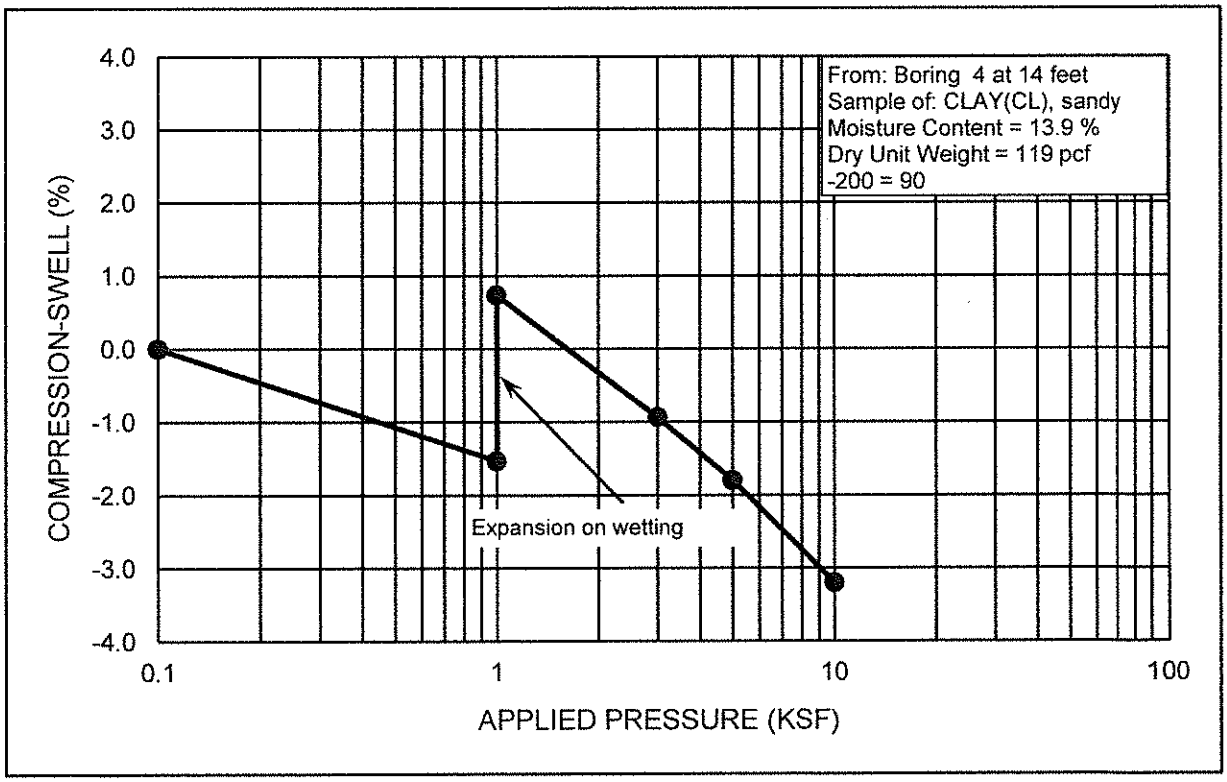
215292A	HEPWORTH-PAWLAK GEOTECHNICAL, INC.	WIDEFIELD SWELL-COMPRESSION TEST RESULTS	FIG. 7



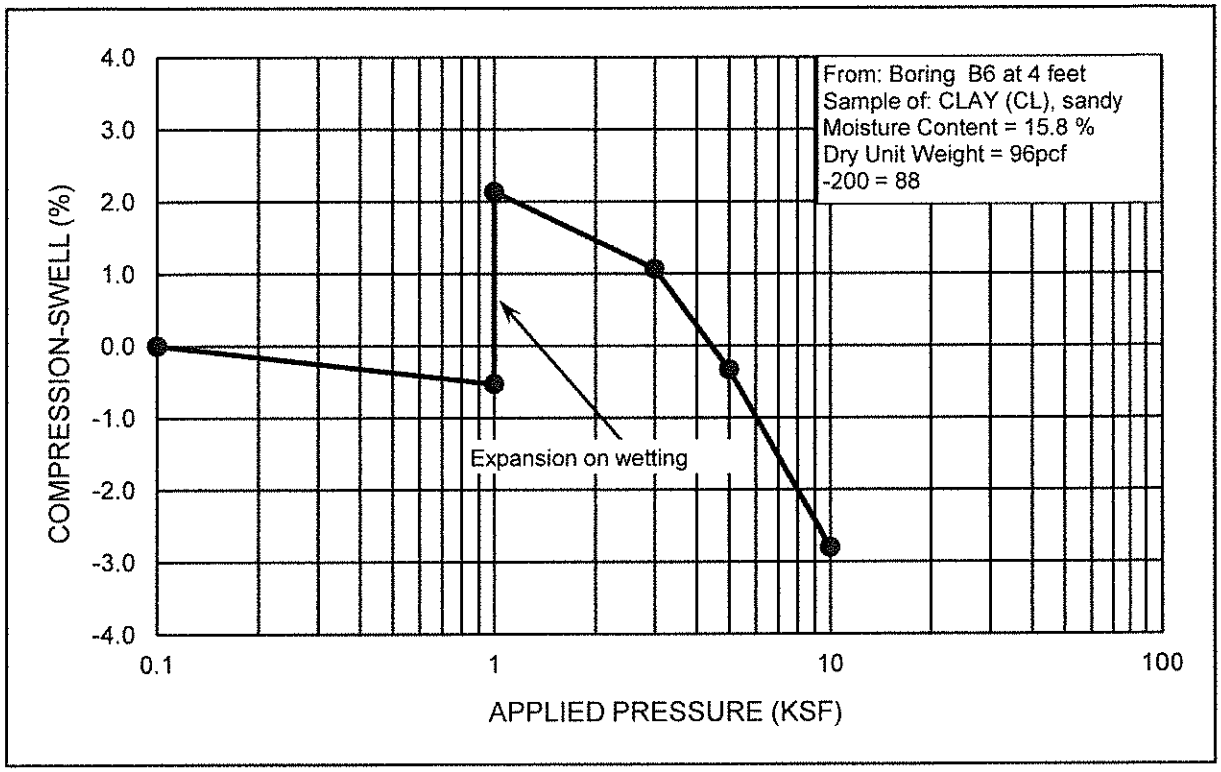


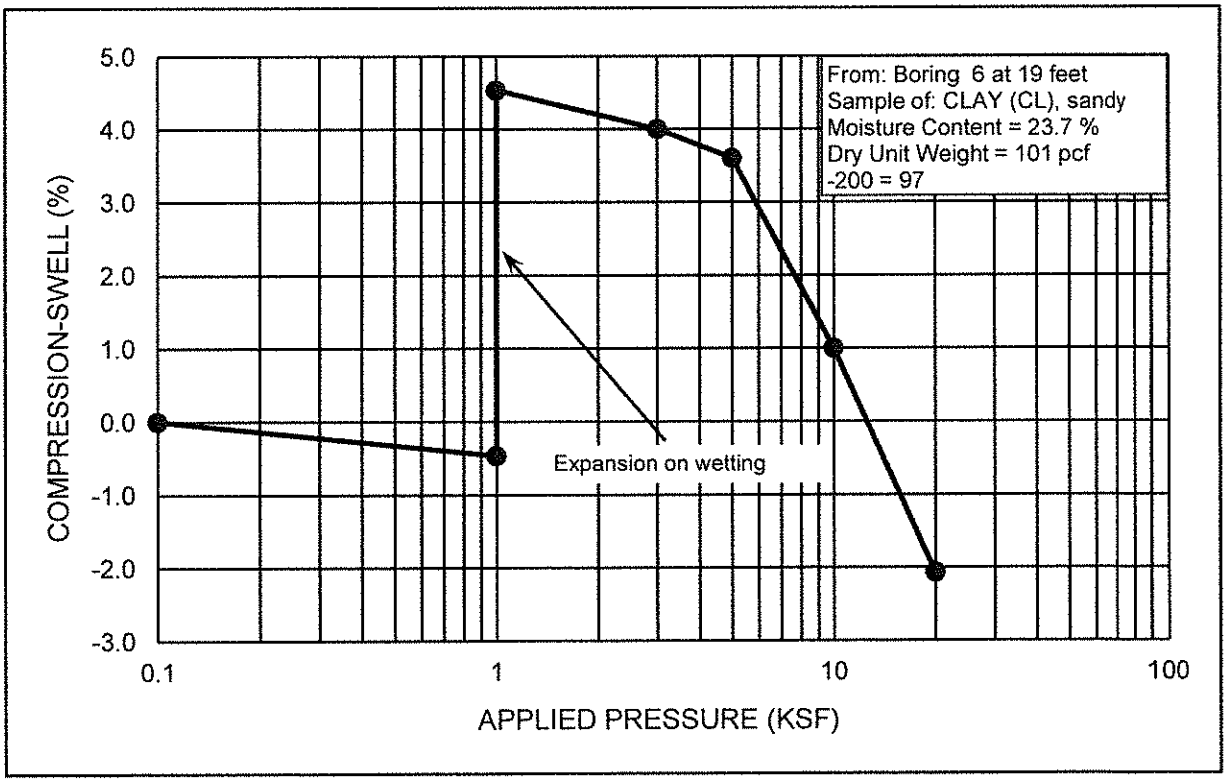
215292A	HEPWORTH-PAWLAK GEOTECHNICAL, INC.	WIDEFIELD SWELL-COMPRESSION TEST RESULTS	FIG. 8



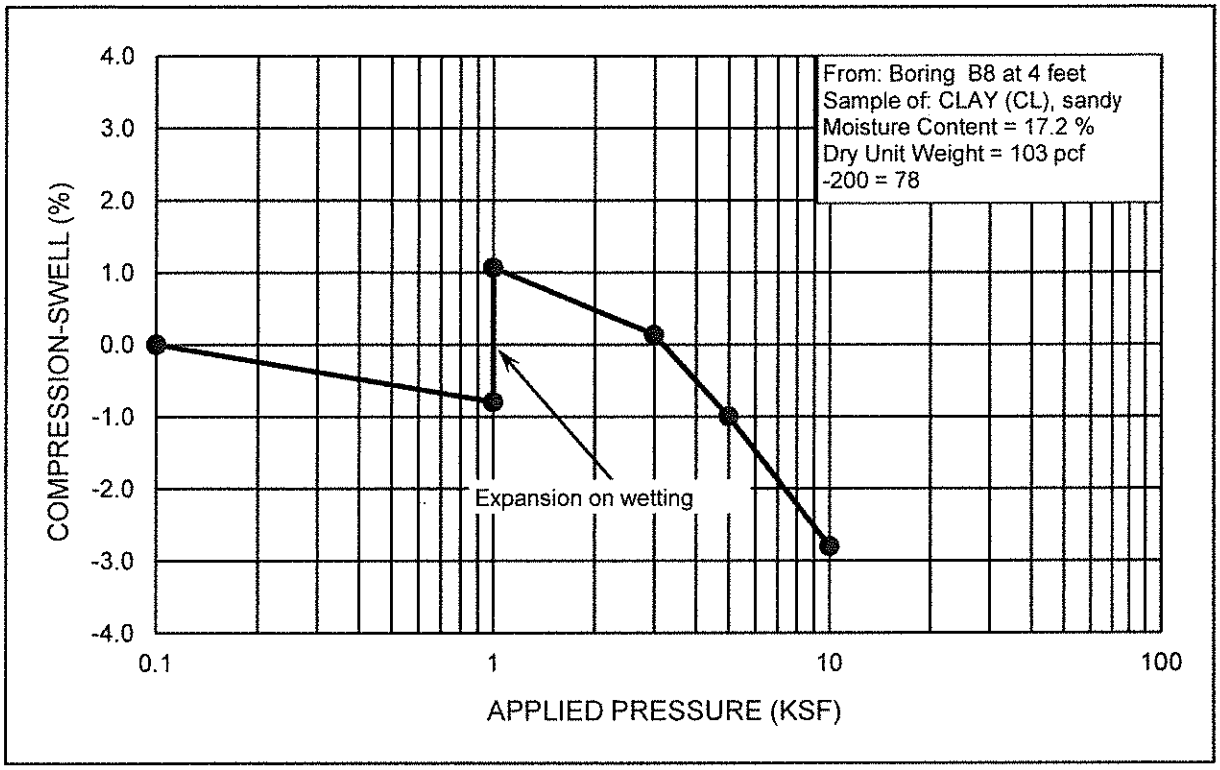


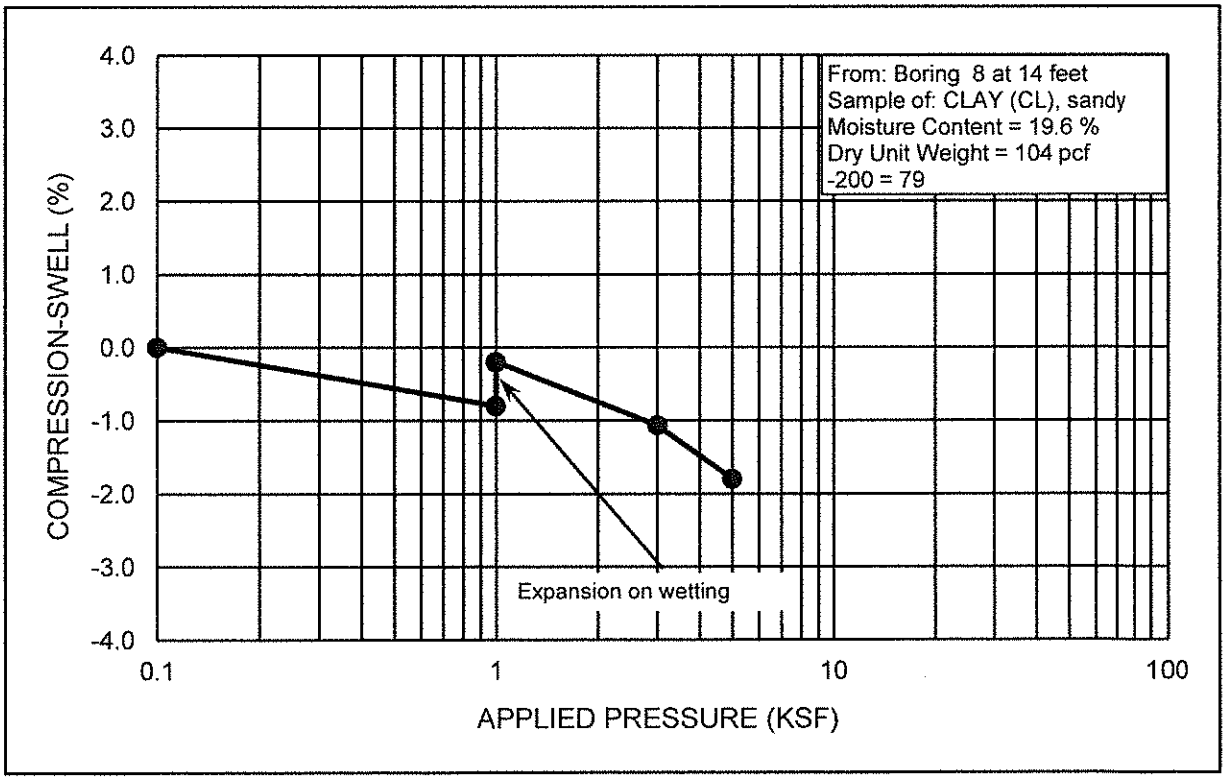
215292A	HEPWORTH-PAWLAK GEOTECHNICAL, INC.	WIDEFIELD SWELL-COMPRESSION TEST RESULTS	FIG. 9



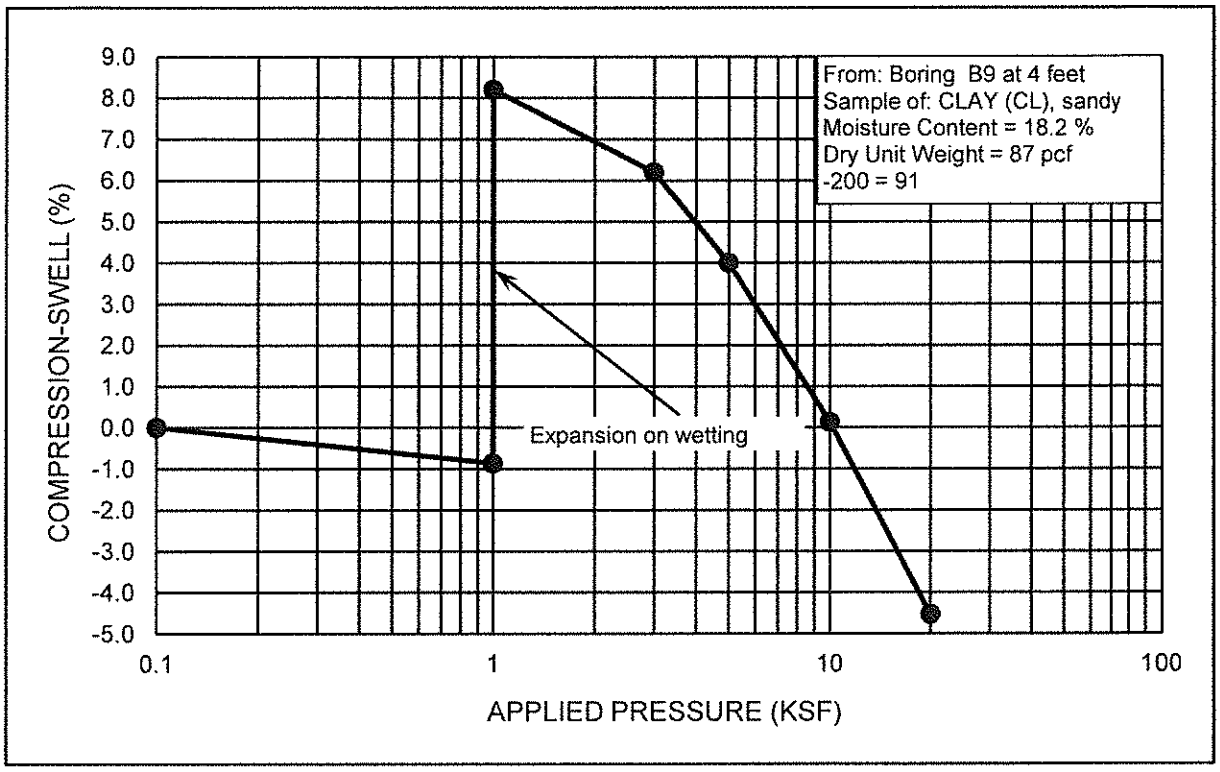


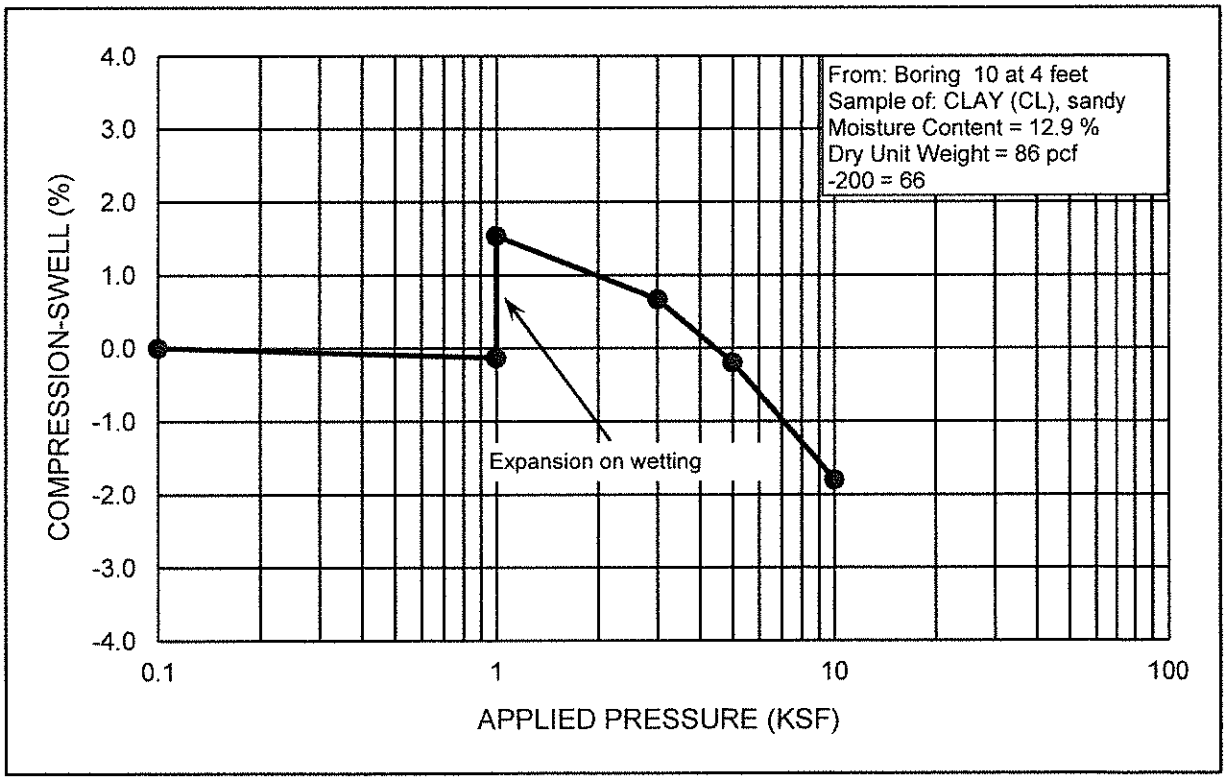
215292A	HEPWORTH-PAWLAK GEOTECHNICAL, INC.	WIDEFIELD SWELL-COMPRESSION TEST RESULTS	FIG. 10



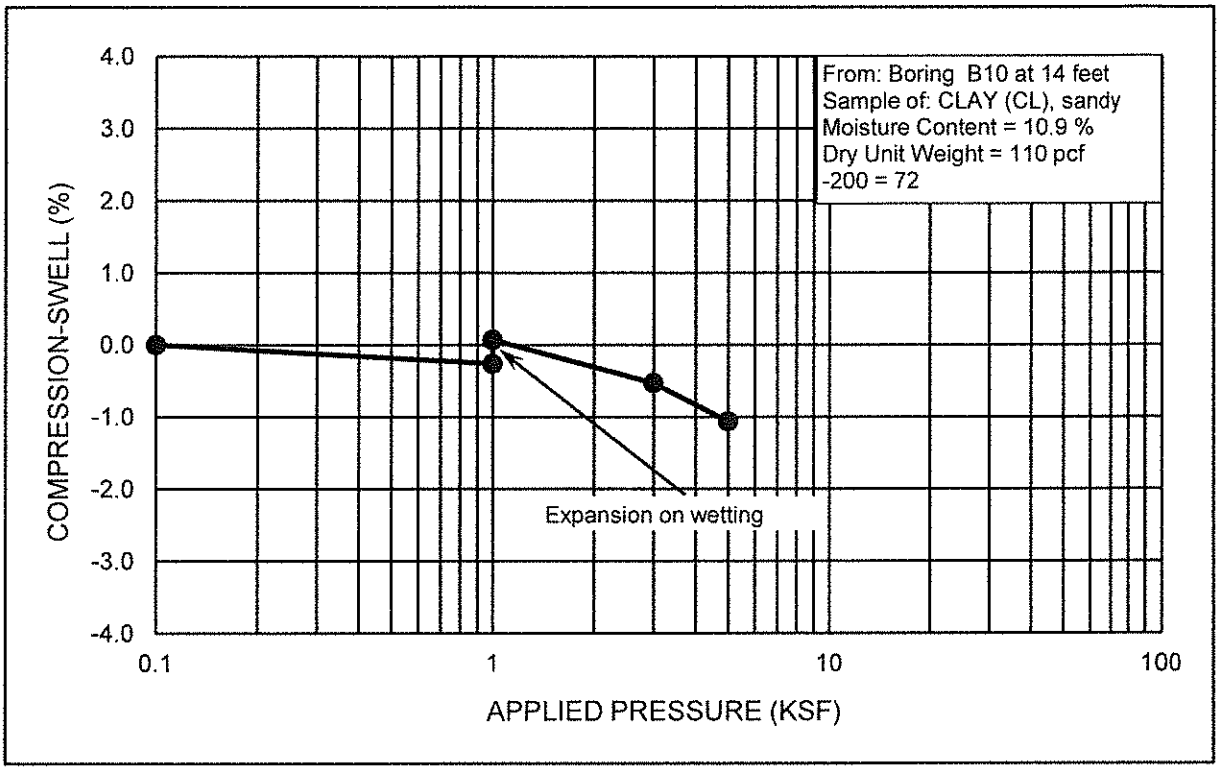


215292A	HEPWORTH-PAWLAK GEOTECHNICAL, INC.	WIDEFIELD SWELL-COMPRESSION TEST RESULTS	FIG. 11

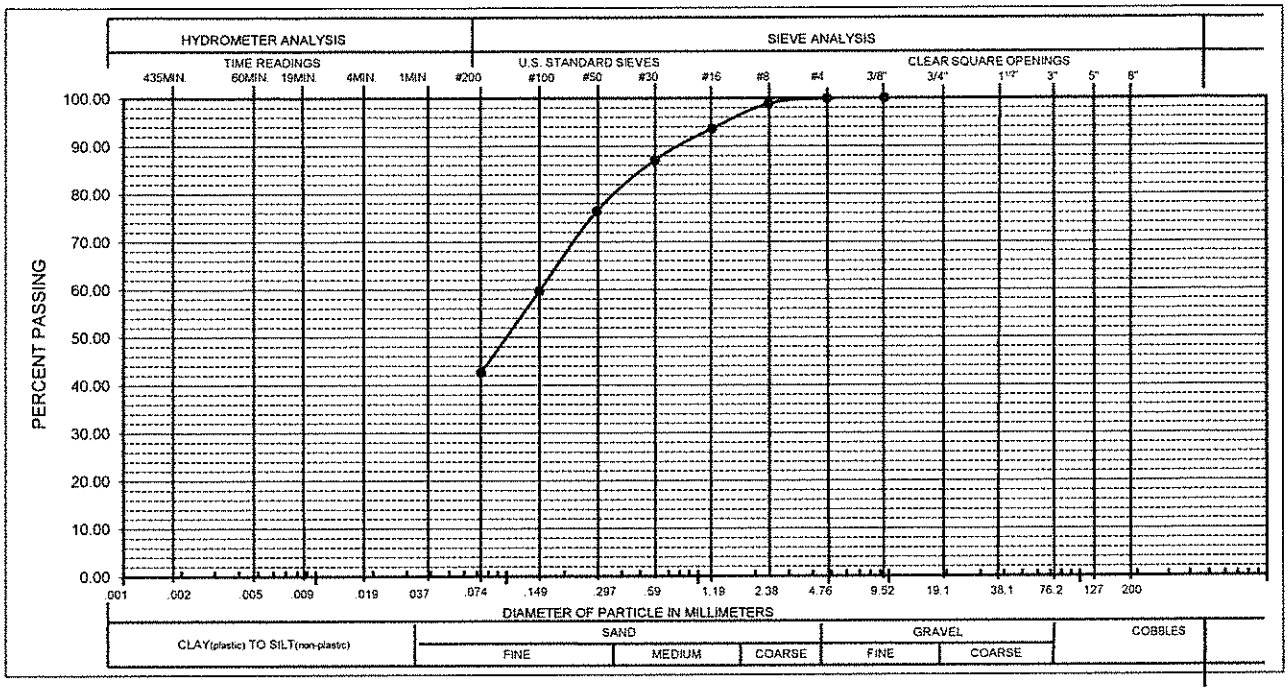




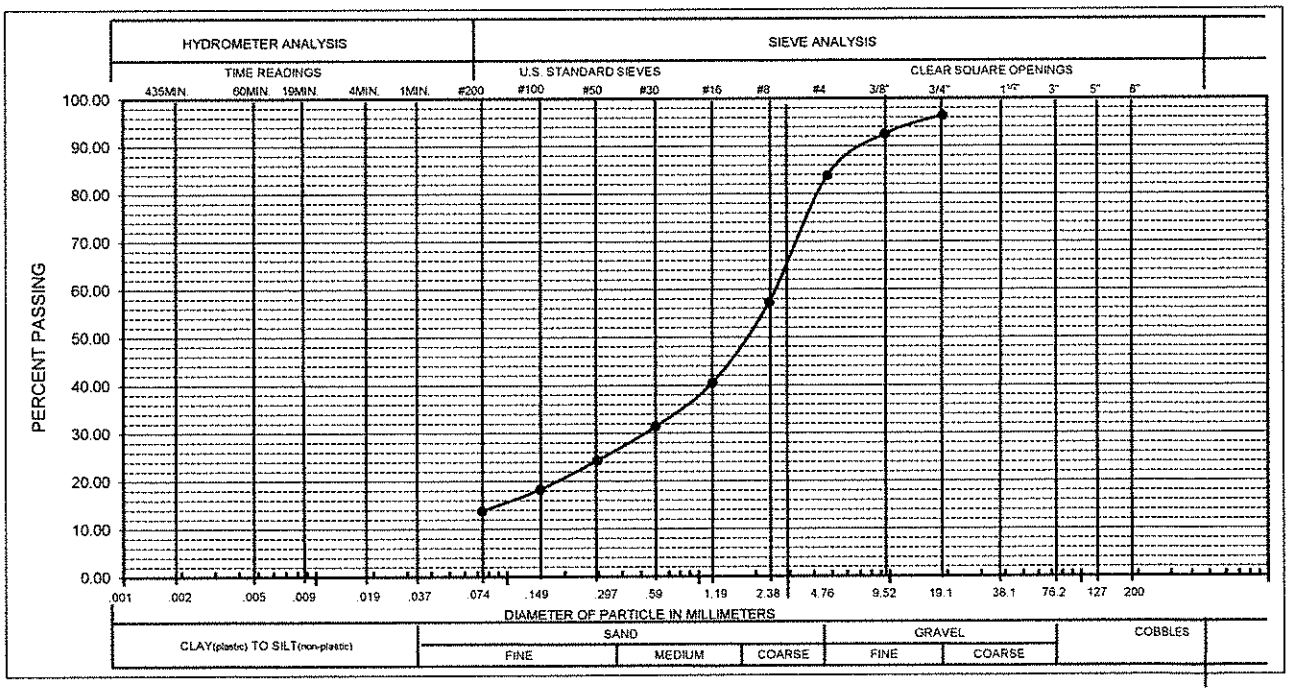
215292A	HEPWORTH-PAWLAK GEOTECHNICAL, INC.	WIDEFIELD SWELL-COMPRESSION TEST RESULTS	FIG. 12



215292A	HEPWORTH-PAWLAK GEOTECHNICAL, INC.	WIDEFIELD SWELL-COMPRESSION TEST RESULTS	FIG. 13

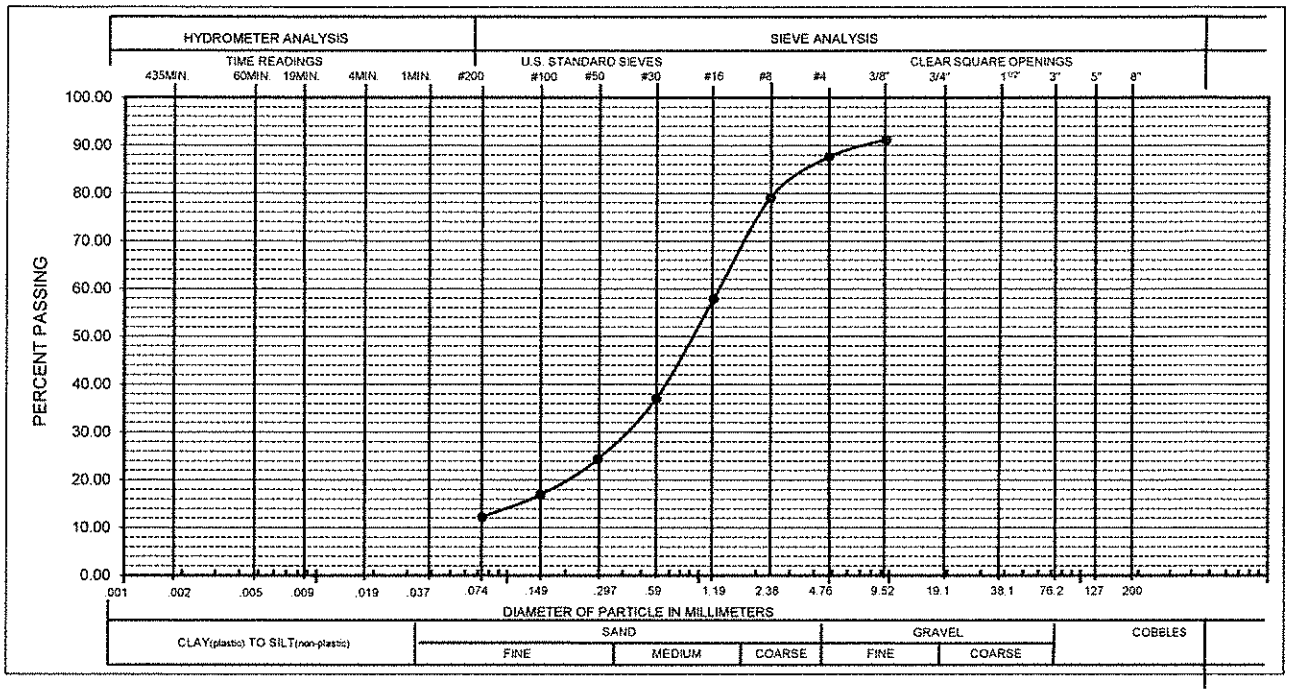


GRAVEL: 0% SAND: 57% SILT AND CLAY: 43%
LIQUID LIMIT: PLASTICITY INDEX:
SAMPLE OF: SAND (SC), clayey FROM: B2 @ 24 feet

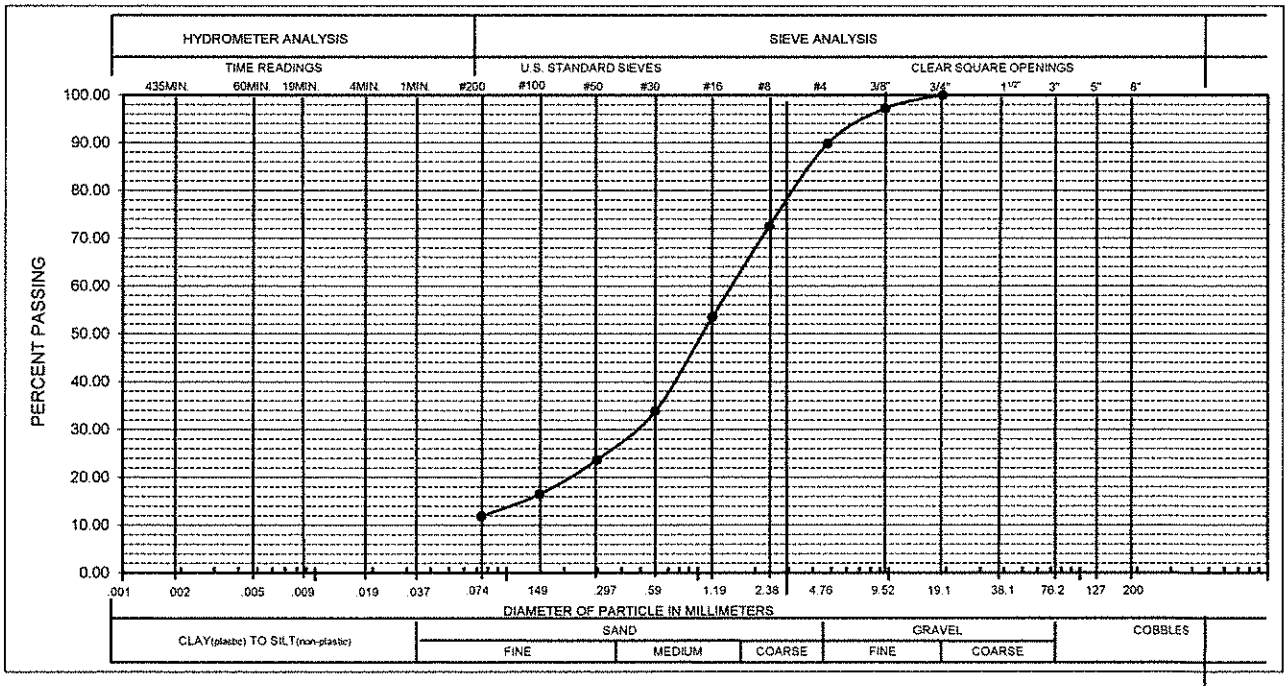


GRAVEL: 16% SAND: 70% SILT AND CLAY: 14%
LIQUID LIMIT: PLASTICITY INDEX:
SAMPLE OF: SAND (SP-SM), gravelly, silty FROM: B2 @ 44 feet

215292A	HEPWORTH-PAWLAK GEOTECHNICAL, INC.	WIDEFIELD GRADATION ANALYSIS	FIG. 14



GRAVEL: 13% SAND: 75% SILT AND CLAY: 12%
LIQUID LIMIT: PLASTICITY INDEX:
SAMPLE OF: SAND (SP-SM), gravelly, sandy FROM: B8 @ 39 feet



GRAVEL: 10% SAND: 78% SILT AND CLAY: 12%
LIQUID LIMIT: PLASTICITY INDEX:
SAMPLE OF: SAND (SP-SM), gravelly, silty FROM: B2 @ 44 feet

215292A	HEPWORTH-PAWLAK GEOTECHNICAL, INC.	WIDEFIELD GRADATION ANALYSIS	FIG. 15

HEPWORTH-PAWLAK GEOTECHNICAL, INC.

JOB NO. 215292A
PROJECT: WIDEFIELD

TABLE 1
SUMMARY OF LABORATORY TEST RESULTS

SAMPLE LOCATION		NATURAL MOISTURE CONTENT (%)	NATURAL DRY UNIT WEIGHT (PCF)	GRADATION			ATTERBERG LIMITS		SWELL/COMP WITH 1,000 psf SURCHARGE (%)	WATER SOLUBLE SULFATES (%)	SOIL OR BEDROCK TYPE (USCS CLASSIFICATION)
BORING	DEPTH (feet)			GRAVEL (%)	SAND (%)	SILT & CLAY (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)			
B-1	4	21.9	89			94	63	39	6.9		CLAY (CL), sandy
	9	14.3	111			75	51	34		0.07	CLAY (CL), sandy
	19	25.8	97			91	62	42	1.7		CLAY (CL), sandy
B-2	4	12.7	95			71			2.4		CLAY (CL), sandy
	14	16.4	103			68				0.675	CLAY (CL), sandy
	24	26.9	95	0	57	43					SAND (SM), silty
	44	12.7		16	70	14					SAND (SP-SM), gravelly, silty
B-3	4	6.4	95			62	33	19	2.1		CLAY (CL), sandy
	14	13.9	118			83			3.6		CLAYSTONE
B-4	4	15.3	113			91				0.813	CLAYSTONE
	9	13.5	114			66			2.5		CLAYSTONE
	14	13.9	118			83			2.3		CLAYSTONE
B-6	4	15.8	96			88			2.7		CLAY (CL), sandy
	14	17.3	108			78					CLAY (CL), sandy
	19	23.7	101			97			5.0		CLAY (CL), sandy
	29	31.5	90			41					SAND (SC), clayey
	54	13.7	119			40					CLAYSTONE
B-7	34	20.5	15								CLAY (CL), sandy
B-8	4	17.2	103			78			1.9		CLAY (CL), sandy
	14	19.6	104			79			0.6		CLAY (CL), sandy
	19	30.3	91			71					CLAY (CL), sandy
	39	11.8	120	13	75	12					SAND (SP-SM), gravelly, silty
B-9	4	18.2	87			91			9.1	0.065	CLAY (CL), sandy
	9	17.3	94			91					CLAY (CL), sandy
	34	35.3	87			98					CLAY (CL), sandy
	54	12.7				87					CLAYSTONE
B-10	4	12.9	86			66			1.7		CLAY (CL), sandy
	14	10.9	110			72			0.3	0.065	CLAY (CL), sandy
	19	22.9	93			65					CLAY (CL), sandy
	44	10.0	124	10	88	12					SAND (SC), clayey

APPENDIX 7

Operations and Maintenance Manual for Extended Detention Basin

Operations and Maintenance Manual
For
Extended Detention Basin

The Glen at Widefield Filing No. 7
Colorado Springs, Colorado

Prepared for:
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c/o Widefield Investment Group
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Kiowa Project No. 14044

February 2016

Extended Detention Basin

Maintenance Recommendations

An Extended Detention Basin (EDB) is a sedimentation basin designed to totally empty out sometime after stormwater runoff ends. Compared to a flood control detention basin, the extended basin uses a much smaller outlet that extends the emptying time for the more frequently occurring runoff events to facilitate pollutant removal. The basins are considered to be "dry" because they are designed not to have a significant permanent pool of water remaining between storm runoff events. However, EDBs may develop wetland vegetation and sometimes shallow pools in the bottom portions of the facilities.

Extended detention basins have low to moderate maintenance requirements. Routine and nonroutine maintenance is necessary to assure performance, enhance aesthetics, and protect structural integrity. The dry basins can result in nuisance complaints if not properly designed or maintained. Bio-degradable pesticides may be required to limit insect problems. Frequent debris removal and grass-mowing can reduce aesthetic complaints. If a shallow wetland or marshy area is included, mosquito breeding and nuisance odors could occur if the water becomes stagnant. Access to critical elements of the pond (inlet, outlet, spillway, and sediment collection areas) must be provided. The basic elements of the maintenance requirements are presented in Table EDB-1.

Table EDB-1
Extended Detention Basin Maintenance Considerations

Required Action	Maintenance Objective	Frequency of Action
Mowing	Occasional mowing to limit unwanted Vegetation. Maintain irrigated turf grass As 2 to 4 inches tall and nonirrigated native Turf grasses at 4 to 6 inches.	Routine – Depending on aesthetic requirements.
Debris and litter removal	Remove debris and litter from the entire Pond to minimize outlet clogging and And improve aesthetics. Outlet structure Trash racks should be clear of any blockage.	Routine – including just before annual storm seasons (that is, April and May) and Following significant rainfall Events.
Erosion and sediment control	Repair and revegetate eroded areas on slopes.	Nonroutine – Periodic and Repair as necessary based on Inspection.
Structural	Repair pond inlets, outlets, forebays, Low flow channel liners, and energy Dissipators whenever damage is discovered.	Nonroutine- Repair as needed based on regular inspections.
Inspections	Inspect basins to insure that the basin Continues to function as initially intended. Examine the outlet for clogging, erosion, Slumping, excessive sedimentation Levels, overgrowth, embankment and Spillway integrity, and damage to any Structural element.	Routine – Annual inspection Hydraulic and structural facilities. Also check for obvious problems during routine maintenance visits, especially for plugging of Outlets.
Nuisance control	Address odor, insects, and overgrowth Issues associated with stagnant or Standing water in the bottom zone.	Nonroutine- Handle as necessary per inspection Or local complaints.