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June 6, 2014  
MGA Project No: GRN001

Nevada Division of Environmental Protection  
Bureau of Waste Management Division  
901 South Stewart Street, Suite 4001  
Carson City, NV 89701

**ATTN: PAUL ECKERT, P.E.**  
**STAFF ENGINEER III, PERMIT WRITER**

**RE: WASTE TIRE MANAGEMENT FACILITY REVISED PERMIT APPLICATION,**  
**GREENU COMMODITIES LLC, 11000 US ALT HWY 50, FERNLEY, NV, 89408**

Mr. Eckert:

On behalf of GreeNu Commodities LLC (GreeNu), McGinley and Associates, Inc. (MGA) and associated third parties has prepared this revised Waste Tire Management Facility permit application for the proposed "tire to fuel" facility to be located near Fernley, Nevada. The location of the site is indicated in Figure 1 and the permit application is included as Appendix A.

Additionally, GreeNu requests that a public hearing be scheduled for this permit application.

## **LIMITATIONS**

The information presented herein is based strictly on information provided to MGA. MGA makes no warranties or guarantees as to the accuracy or completeness of information provided or compiled by others. Judgments and opinions leading to conclusions and calculations are generally made with an incomplete knowledge of the conditions present. Additional information not found or available to MGA at the time of preparing this permit application may result in a modification to the conclusions and calculations contained herein.

The services performed by MGA have been conducted in a manner consistent with the level of care ordinarily exercised by members of our profession currently practicing under similar conditions. No other warranty, expressed or implied, is made. The use of the word "certify" in this document constitutes an expression of professional opinion regarding those facts or findings which are the subject of the certification and does not constitute a warranty or guarantee, either expressed or implied.

## CLOSING

Should you have any questions regarding this permit application please contact Anthony Dimpel of McGinley and Associates at (775) 829-2245, Larry Appel of Advanced Tek Systems at (253) 219-9507, or Kevin Rose of GreeNu Commodities LLC at (253) 307-4339.

**Respectfully submitted,**

**McGinley and Associates, Inc.**



Anthony Dimpel, E.I., C.E.M # 2353, Exp. 3/20/2015  
Project Manager, McGinley and Associates

I certify that I am familiar with the information contained in the application and I believe that the information provided is complete and accurate.



Kevin Rose  
Chief Administrative Officer, GreeNu Commodities LLC



**FIGURE 1**

TITLE:  
**PROJECT LOCATION MAP**  
 -SHOWING-  
**GREEN TIRE**  
**PYROLYSIS FACILITY**  
**HAZEN, NEVADA**



FILE:  
**GRN-001-01**

COORDINATE SYSTEM:  
**NAD 1983 UTM Zone 11N US Feet**

JOB NO.:  
**GRN-001**

DATE:  
**6/17/2013**

REV.	DESIGNED	TD	CHECKED	TD	REVISION:
	DRAWN	TAD	APPROVED	JM	

# **APPENDIX A**

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## **Waste Tire Management Facility Permit Application**



WASTE TIRE MANAGEMENT FACILITY  
PERMIT APPLICATION  
Nevada Division of Environmental Protection  
Solid Waste Branch



Date 03/10/2014

**Instructions:** Complete Sections I through V. Attach additional sheets if necessary to thoroughly answer the questions.

**Section I. Applicant Information**

---

1. Land Owner

Name: GreeNu Commodities LLC  
City: Fernley State: NV Zip Code: 89406  
Phone: 253-383-8820, 253-365-9333

2. Facility Owner

Name: GreeNu Commodities LLC  
Address: 1050 S. 21st Street  
City: Sparks State: NV Zip Code: 89431  
Phone: 253-383-8820, 253-365-9333

3. Facility Operator

Name: GreeNu Commodities LLC  
Address: 1050 S. 21st Street  
City: Sparks State: NV Zip Code: 89431  
Phone: 253-383-8820, 253-365-9333





WASTE TIRE MANAGEMENT FACILITY  
 PERMIT APPLICATION  
 Nevada Division of Environmental Protection  
 Solid Waste Branch

**Section II. Facility Location**

1. Location

Name: GreeNu Commodities LLC (Within Western Nevada Rail Park)

Physical Address: 11000 US ALT HWY 50

City: Fernley

State: NV

County: Lyon

Zip Code: 89408

Lat: 39 deg 34' 22.52" Long: 119 deg 05' 25.14"

Phone:

1. Attach a site map that shows the location of the tire storage area, each building at the facility, fences and gates, and identifies surrounding landowners. Scale should reflect the size of the facility  
 See Figures in Attachment 1 of the Attached Application
2. Attach a copy of the lease agreement with the property owner, if applicable.  
 N/A

**Section III. Facility Operation**

1. Estimate the number of passenger tire equivalents (PTE's) that the facility will receive each year. (A PTE = one passenger tire or 20 lbs. of processed tire material):

Refer to Section in Application See Section 1.1 of Attached Application

2. If tires or tire materials are to be processed at the facility, indicate how and what equipment will be used. All processing equipment must be in operating condition before the facility begins operation.

Refer to Section in Application See Section 1.2 of Attached Application

3. Describe the final use for the tires or processed material or list available markets. A minimum of 75% of the material accepted at the facility must be used or removed within one year of receipt.

Refer to Section in Application See Section 1.3 of Attached Application

4. Tires will be received from:  Private Haulers  Public  Self-hauled



5. Describe the methods that will be used to control access to the facility:  
**Refer to Section in Application** See Section 1.5 of Attached Application
6. Describe how vectors will be controlled:  
**Refer to Section in Application** See Section 1.6 of Attached Application
7. Attach proof of compliance with any applicable ordinances or other requirements of the state or local governments for permits.  
**Refer to Section in Application** See Section 1.7 of Attached Application

Tire Storage

1. Estimate the maximum number of passenger tire equivalents (PTE's) that will be stored at the facility at any one time.  
960,000
2. Tires and processed tire material will be stored:  
 Indoors (Answer question 7 only)  
 Outdoors (Answer questions 3-6)  
 Both (Answer questions 3-7)
3. Describe the location of the tire storage area. It must not be located within 10 ft. of any property line or building and shall not exceed 6 ft. in height when within 20 ft. of any property line or building.  
**Refer to Section in Application** See Section 2.3 of Attached Application
4. Attach a scaled schematic drawing of the pile arrangement.  
**Refer to Section in Application** See Section 2.4 of Attached Application
5. Describe how 40-foot fire lanes will be established around the perimeter of each stockpile, and how the lanes will be kept clear of flammable or combustible material or vegetation:  
**Refer to Section in Application** See Section 2.5 of Attached Application
6. Describe how surface water runoff will be directed away from the tire storage area:  
**Refer to Section in Application** See Section 2.6 of Attached Application



WASTE TIRE MANAGEMENT FACILITY  
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7. Describe how tires and processed tire material will be stored in accordance with guidelines for indoor tire storage adopted by Nevada Administrative Code 477:

Refer to Section in Application N/A

Fire Prevention Measures

1. Provide the names of all individuals to be contacted in the event of a fire, one of which must be the Fire District for your site:

Name: See Section 3.1 of Attached Application \_\_\_\_\_ Title: \_\_\_\_\_ Day phone: \_\_\_\_\_ Evening phone: \_\_\_\_\_

Name: See Section 3.1 of Attached Application \_\_\_\_\_ Title: \_\_\_\_\_ Day phone: \_\_\_\_\_ Evening phone: \_\_\_\_\_

Name: See Section 3.1 of Attached Application \_\_\_\_\_ Title: \_\_\_\_\_ Day phone: \_\_\_\_\_ Evening phone: \_\_\_\_\_

2. List the equipment to be used to control fires and the manner in which it will be used:

Refer to Section in Application See Section 3.2 of Attached Application

3. Develop a list of procedures that will be used if a fire occurs at the facility, and measures to minimize the spread of fire. Use additional pages as necessary. Attach a letter of approval of the fire protection procedures from the local emergency planning committee:

Refer to Section in Application See Section 3.3 of Attached Application

4. Describe how surface and ground water will be protected from potential runoff resulting from extinguishing a fire at the facility:

Refer to Section in Application See Section 3.4 of Attached Application

**Section IV. Financial Assurance**

Each facility is required to establish a financial assurance mechanism to cover the costs of removing all PTE's from the facility whenever it is necessary in accordance with Nevada Administrative Code 444.68525. Use the information below to evaluate your financial assurance needs and to establish a financial assurance mechanism as described. Attach proof of the financial assurance mechanism to the application.

Cost Estimate

Cost Estimate from Calculation Sheet- See Section 4 of Attached Application

Financial assurance required = \$ 1,215,277.40



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Financial Assurance Mechanisms

General requirements

The mechanism for financial assurance must be in effect before any tires or tire-derived materials are accepted at the facility.

An entity providing the mechanism used to demonstrate financial assurance shall reimburse or make payments to the owner, operator or any other person designated by the solid waste management authority, from that mechanism, for expenses in such amounts as the solid waste management authority shall direct in writing.

Allowable mechanisms

The mechanisms used to demonstrate financial assurance must ensure that the money necessary to remove all PTE's from the facility will be available whenever it is needed. The financial assurance may be in the form of:

1. A trust fund;
2. A surety bond guaranteeing payment or performance;
3. A letter of credit;
4. A policy of insurance;
5. A mechanism approved by the solid waste management authority; or
6. Any combination of the options listed above.

**Section V: Signatures**

All owners and operators of the facility and property must sign the application, including the president or executive office of a corporation or a partner when applicable. If an owner or operator is a governmental unit, a certification of the signer's authority must be included.

I certify that I am familiar with the information contained in the application and I believe that the information provided is complete and accurate.

Name Kevin Rose Signature  Date 3/10/2014

Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

**Waste Tire Management Facility Permit Application**

**GreeNu Commodities LLC**

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## 1. Facility Operation

### 1.1 Estimate the number of passenger tire equivalents (PTE's) that the facility will receive each year. (A PTE = one passenger tire or 20 lbs. of processed tire material)

The facility will process tires 330 days per year and will process approximately 200 tons of tires during each day of operation which equates to 6,600,000 PTE's per year. As such, the facility will receive approximately 6,600,000 PTE's per year.

### 1.2 If tires or tire materials are to be processed at the facility, indicate how and what equipment will be used. All processing equipment must be in operating condition before the facility begins operation

#### General Process Overview

Automobile tires are delivered to the facility in bales held together by steel straps. Each bale weighs roughly one ton and comprises of approximately 89-110 tires. Tire bales are stored in an outdoor storage yard prior to use. Bales are transported from the storage yard to a "bale breaking bin" which is located inside the facility building via an electric forklift. Bales are then manually broken apart and the individual tires are manually loaded onto a conveyor belt which transfers the tires to a tire shredding unit which shreds the tires into "tire chips" that have a nominal size no bigger than two inches. Tires are fed into the shredder at a rate of approximately 8.33 tons/hour. The tire chips are then conveyed to a hopper/auger system that feeds the pyrolysis unit through a double-door airlock.

The pyrolysis unit thermally decomposes the tires at which point two separate streams are generated: 1) a gas stream designated as "process gas" accounts for approximately 54% of the mass and 2) a solid stream which consists of the steel from the tire belts (and the steel straps from the bales) and the portion of the tires that was not converted to process gas during the pyrolysis process which is designated is "carbon black". The solid stream accounts for the remaining 46% of the mass. As discussed in the following sections the process gas stream is further separated into "Pyro Oils" and "Pyrogas" which account for 46% and 8% of the tire mass, respectively.

To summarize, during the pyrolysis process the tires 100% converted into one of four products: 1) carbon black, 2) scrap steel, 3) pyro oils, and 4) pyro gas.

#### Process Gas Stream

Process gas is drawn from the pyrolysis unit via vacuum pressure and is then passed through a cyclone separator which removes particles from the process gas stream. Following the cyclone separator the process gas enters a particle wash system (PWS) in which the majority of the process gas is condensed into pyro oil. The particle wash system also removes any residual particles, tars, and waxes from the portion of the process gas stream that was not condensed. The remaining process gas then travels to a vertical condenser in which the rest of the condensable process gas is condensed into pyro oil. The small portion (15%) of the process gas that is not condensed is now designated as "Pyrogas". The Pyrogas, in its entirety is utilized as the fuel source for the burner that provides the all of the necessary heat for the pyrolysis process (no outside fuels are needed). Prior to being combusted the Pyrogas is passed through a sulfur removal system which decreases the sulfur concentration in the Pyrogas to less than one part per million. The combustion of the Pyrogas in the pyrolysis unit represents the main emissions from the facility.

100% of the process gas generated during the pyrolysis process is accounted for either as pyro oil (approximately 85%) or pyro gas (approximately 15%). Additionally, after exiting the pyrolysis unit the process gas/pyro gas remains completely contained in the process equipment until it is converted to pyro oil or combusted in the pyrolysis unit.

#### Solid Stream (Carbon Black and Steel)

The solid stream is discharged from the pyrolysis unit through a double-door airlock onto a water cooled auger which cools the solid stream. A drum magnet metal separator is located directly after the water cooled auger which separates the steel from the carbon black. The steel stream drops directly into a storage bin pending being sold and transported off-site. Following the metal separator the carbon black stream is pneumatically conveyed to one of two storage silos pending being sold and transported off-site.

#### Detailed Process Description

Figure 1 (provided in Attachment 1) illustrates how many of each of the primary pieces of equipment the facility will consist of as well as a simplified material flow.

Figure 2 (provided in Attachment 1) is a more detailed process and material flow diagram.

See Figures 3 and 4 for scaled drawings of facility and process equipment.

As indicated on Figure 1 the facility will consist of one tire shredding unit (4A through 4G on Figure 2) which provides tire chips for four separate but identical pyrolysis packages each capable of processing 50 tons of tires per day for a total facility capacity of 200 tons per day. Each pyrolysis unit (Skid #1) will be equipped with a dedicated "Skid #2". Each Skid #2 consists of all the equipment necessary (6B through 6J on Figure 2) to handle the process gas produced from each pyrolysis unit with the exception of the sulfur removal system. One sulfur removal system will be used to handle the pyro gas from all four pyrolysis units. The pyrolysis unit, all equipment on "Skid #2", and the sulfur removal system (8 on Figure 2) all are manufactured and bought as a single package from American Combustion Technologies, Inc. (ACTI) of Paramount, CA.

The carbon black and steel stream exits each pyrolysis unit directly onto a single enclosed conveyor belt which transports the carbon black and steel to a single water cooled auger (11A on Figure 2). The water cooled auger then discharges into a single magnetic drum separator (12 on Figure 2) which separates the carbon black from the steel. The steel exits the magnetic drum separator directly into a steel storage bin (16 on Figure 2). The carbon black exits the magnetic drum separator directly into a pneumatic conveyance system which transports the carbon black to one of two storage silos located outside the building and above railroad tracks.

## List of Processes Units

The table below lists all the major processes and their designated process number.

	Process #	Process Description
	1	Forklift (Transports Tire Bales from Outdoor Yard to Bale Breaking Bin)
	2	Floor Crane (Lifts Bales Into Bale Breaking Bin)
	3	Bale Breaking Bin
	4A	In-Feed Belt Conveyor (ST-400E0250HP Tire Shredding System)
	4B	ST 400E-250HP Tire Shredder (ST-400E0250HP Tire Shredding System)
	4C	Taper Slot Vibrating Conveyor (ST-400E0250HP Tire Shredding System)
	4D	Return Conveyor Belt (ST-400E0250HP Tire Shredding System)
	4E	Final Stacking Belt Conveyor (ST-400E0250HP Tire Shredding System)
	4F	Final Discharge Belt Conveyor #1 (ST-400E0250HP Tire Shredding System)
	4G	Final Discharge Belt Conveyor #2 (ST-400E0250HP Tire Shredding System)
	5A	Primary Pyrolysis Unit Tire Chip Feed Hopper
	5B-1	Gravity Fed Tire Chip Chute- Unit #1 (Primary Hopper to Pyrolysis Unit #1)
	5B-2	Gravity Fed Tire Chip Chute- Unit #2 (Primary Hopper to Pyrolysis Unit #1)
	5B-3	Gravity Fed Tire Chip Chute- Unit #3 (Primary Hopper to Pyrolysis Unit #1)
	5B-4	Gravity Fed Tire Chip Chute- Unit #4 (Primary Hopper to Pyrolysis Unit #1)
Skid#1 -1	6A-1	Pyrolysis Equipment (Skid #1) – Unit #1
	6B-1	Cyclone Separator (Skid #1) – Unit #1
Skid#2 -1	6C-1	Particle Wash System (Skid #2) – Unit #1
	6D-1	Condenser/Demister (Skid #2) – Unit #1
	6E-1	Gas Blowers (Skid #2) – Unit #1
	6F-1	Intermediate Pyrogas Storage Tank (Skid #2) – Unit #1
	6G-1	Compressor (Skid #2) – Unit #1
	6H-1	Pyro Oil Particle Wash System Pumps (Skid #2) – Unit #1
	6I-1	Pyro Oil Heat Exchanger (Skid #2) – Unit #1
	6J-1	Cooling Tower for Heat Exchangers (Skid #2) – Unit #1
Skid#1 -2	6A-2	Pyrolysis Equipment (Skid #1) – Unit #2
	6B-2	Cyclone Separator (Skid #1) – Unit #2
Skid#2 -2	6C-2	Particle Wash System (Skid #2) – Unit #2
	6D-2	Condenser/Demister (Skid #2) – Unit #2
	6E-2	Gas Blowers (Skid #2) – Unit #2
	6F-2	Intermediate Pyrogas Storage Tank (Skid #2) – Unit #2
	6G-2	Compressor (Skid #2) – Unit #2
	6H-2	Pyro Oil Particle Wash System Pumps (Skid #2) – Unit #2
	6I-2	Pyro Oil Heat Exchanger (Skid #2) – Unit #2
	6J-2	Cooling Tower for Heat Exchangers (Skid #2) – Unit #2
Skid#1 -3	6A-3	Pyrolysis Equipment (Skid #1) – Unit #3
	6B-3	Cyclone Separator (Skid #1) – Unit #3
Skid#2 -3	6C-3	Particle Wash System (Skid #2) – Unit #3
	6D-3	Condenser/Demister (Skid #2) – Unit #3
	6E-3	Gas Blowers (Skid #2) – Unit #3
	6F-3	Intermediate Pyrogas Storage Tank (Skid #2) – Unit #3
	6G-3	Compressor (Skid #2) – Unit #3
	6H-3	Pyro Oil Particle Wash System Pumps (Skid #2) – Unit #3
	6I-3	Pyro Oil Heat Exchanger (Skid #2) – Unit #3
	6J-3	Cooling Tower for Heat Exchangers (Skid #2) – Unit #3
Skid#1 -4	6A-4	Pyrolysis Equipment (Skid #1) – Unit #4
	6B-4	Cyclone Separator (Skid #1) – Unit #4
Skid#2 -4	6C-4	Particle Wash System (Skid #2) – Unit #4
	6D-4	Condenser/Demister (Skid #2) – Unit #4
	6E-4	Gas Blowers (Skid #2) – Unit #4
	6F-4	Intermediate Pyrogas Storage Tank (Skid #2) – Unit #4
	6G-4	Compressor (Skid #2) – Unit #4
	6H-4	Pyro Oil Particle Wash System Pumps (Skid #2) – Unit #4
	6I-4	Pyro Oil Heat Exchanger (Skid #2) – Unit #4
	6J-4	Cooling Tower for Heat Exchangers (Skid #2) – Unit #4
	7	Main Pyrogas Holding Tank
	8	Sulfur Removal System
	9	Propane Storage Tank
	10	Transfer Belt Conveyor (Carbon Black/Steel from Pyrolysis Units to Water Cooled Auger)
	11A	Water Cooled Auger (Carbon Black/Steel Stream)
	11B	Radiator Water Cooling System for Water Cooled Auger
	12	Rotating Drum Magnet (Metal Removal from Carbon Black)
	13A-1	Pneumatic Conveyance System – Piping to Silo 14-1
	13A-2	Pneumatic Conveyance System – Piping to Silo 14-2
	13B	Blower for Pneumatic Conveyance System
	14-1	Elevated Carbon Storage Silo #1
	14-2	Elevated Carbon Storage Silo #2
	15-1	Pyro Oil Underground Storage Tank #1
	15-2	Pyro Oil Underground Storage Tank #2
	15-3	Pyro Oil Underground Storage Tank #3
	15-4	Pyro Oil Underground Storage Tank #4
	15-5	Pyro Oil Underground Storage Tank #5
	16	Steel Storage Bin

1: Fork Lift: Bales of tires held together by steel straps and delivered to the facility and stored in an outdoor yard. An electric fork lift transfers tire bales from outdoor yard to inside the facility.

2: Floor Crane: An electric/hydraulic floor crane lifts the tire bales into a bale breaking bin.

3: Bale Breaking Bin: The steel straps holding the tires together are manually cut and the tires bales are broken apart. Individual tires are then manually loaded onto a conveyor belt that transfers the tires to the tire shredding unit.

4A through 4G: Tire Shredding Package: Shred Tech of Cambridge, Ontario, Canada is providing the tire shredding package for the facility. The package consists of units 4A through 4G.

5A: Primary Tire Chip Feed Hopper: The primary tire chip feed hopper resides in the clear story above the pyrolysis units and feeds the tire chips into the pyrolysis units. The primary hopper is a bin that is 50 feet long, 8 feet wide, and is V-shaped at the bottom.

5B: Gravity Fed Tire Chip Chute: Tires are gravity fed into the chutes from the primary tire chip feed hopper (5A). The chutes are connected directly to the double-door airlocks of the pyrolysis equipment. As the double-door airlocks open tire chips gravity feed into the chutes.

6A through 6J: Pyrolysis Package: The pyrolysis package consists of 6A through 6J.

7: Main Pyrogas Storage Tank: The pyrogas is stored in the main pyrogas holding tank pending utilization as the fuel for the pyrolysis burners.

8: Sulfur Removal System: Prior to being stored in the main pyrogas holding tank (7) and ultimately combusted in the burners the pyrogas is passed through a sulfur removal system to decrease sulfur concentration.

9: Propane Storage Tank: 250 gallon propane tank where the propane required upon pyrolysis system start-up is stored.

10: Transfer Belt Conveyor (Carbon Black/Steel from Pyrolysis Units to Water Cooled Auger): The carbon black and steel stream exits the double door airlocks from all four pyrolysis units onto a single belt conveyor which transfers the carbon black/steel stream to the water cooled auger. The conveyor belt, the connections to the pyrolysis units, and the connection to the water cooled auger are enclosed.

11A and 11B: Water Cooled Auger (Carbon Black and Steel Stream): The carbon black/steel is discharged from the pyrolysis unit through a double-door airlock onto a conveyor belt which transfers the stream to the water cooled auger where it is cooled from approximately 500°F to 100°F. The auger is completely enclosed and is cooled via a re-circulating radiator type water cooler (process 16).

12: Rotating Drum Magnetic Metal Separator: Following the cooling process the carbon black/steel stream is run through a rotating drum magnetic metal separator separates the carbon black from the steel. From the drum separator the steel stream is discharged directly into a steel storage bin (16) and the carbon black is discharged directly into a pneumatic conveyance system (12A and 12B).

13A and 13B: Pneumatic Carbon Black Conveyance System: Following the magnetic separator the carbon black stream is discharged into a pneumatic conveyance system. The conveyance system transports the carbon black to one of two storage silos (13). The pneumatic conveyance system consists of two main parts: 1) the transport piping

(12A) and 2) the blower (12B). Each storage silo will have dedicated transport piping but one blower will be used for both silos.

14: Carbon Black Storage Silos: The carbon black that is produced is stored in one of two vertical elevated storage silos located above railroad tracks that each has a capacity of 23,275 cubic feet. The carbon black is stored pending being sold and transported offsite.

15: Underground Storage Tanks: The liquid pyro oil produced during the process gas condensation process is piped to underground storage tanks where it is stored prior to being sold and transported off site. The pyro oil is thick and similar to bunker fuel #4. There are a total of five – 40,000 gallon underground storage tanks for pyro oil storage.

16: Steel Storage Bin: Steel is stored in bin pending being sold and transported off-site.

**1.3 Describe the final use for the tires or processed material and list available markets. A minimum of 75 % of the material accepted at the facility must be used or removed within one year of receipt**

As discussed in the previous section four materials are produced during the tire pyrolysis process 1) pyrogas 2) pyro oil 3) carbon black and 4) steel. 100% of the materials produced are either used onsite or are marketable commodities which are sold. The following section describes the final fate and markets of the materials produced. The facility will recover 100% of the tires that are processed as one of the above four materials. Meaning that of the estimated 6,600,000 PTE's that will be received each year 6,600,000 PTE's worth of processed material will be used or sold in that same year. As such, 100% of the tires accepted at the facility will be processed and used/sold within one year of receipt.

**1.3.1. Pyrogas**

The produced pyrogas is 100% utilized onsite as a fuel source.

**1.3.2. Pyro Oil**

Due to the nature of pyro oil it is very desirable for multiple applications which include but are not limited to the following markets: asphalt oil, heating oil, and renewable fuel for use in varying on and off road fuel markets.

More specifically, GreeNu Commodities has in place preliminary agreements with an established company with extensive operating history in the fuel sector, to accept the GreeNu liquid fuel at a pre-determined, market fluctuating rate. The product will be shipped via rail from the GreeNu site to the company's specified location in Southern California. This company has fuel operations throughout the US and will utilize 100% of GreeNu's liquid fuel as a blend fuel with other renewable fuels for use in off-road markets.

**1.3.3. Carbon Black**

There are a number of different carbon black markets that include but are not limited to; tire black suppliers for use in distribution of varying carbon rich products, export the product to countries in high carbon black demand, alternative refining markets for specialized carbon black products, and directly to specific markets in the asphalt, plastics, filtration, and other industries.

More specifically, GreeNu Commodities has in place preliminary agreements with an established company with extensive operating history in the carbon black sector, to accept the GreeNu carbon black at a pre-determined, market fluctuating rate. This company has port operations in the Port of Oakland and the product will be shipped to that off-taker from the GreeNu site, via rail, to the Port of Oakland. This company will utilize 100% of GreeNu's carbon black for use in strategic markets in high demand for carbon black in Vietnamese and Chinese markets.

### 1.3.4. Steel

Because tires are made with steel wire to reinforce strength, elongation and stiffness in a tire, the scrap tire steel that is yielded from the GreeNu process is of high grade. Because different tire manufactures use different types of steel, this product has its own classification and is considered “ASTM 1070 Steel Tire Wire”. There are approximately 2.5 pounds of steel belts and bead wire in a passenger car tire. This material is made from high carbon steel with a nominal tensile strength of 2,750 MN/m<sup>2</sup>.

GreeNu Commodities has in place preliminary agreements with local/domestic steel recyclers to provide open-top-roll-off containers to the facility, whereby the company will dispose of the steel as accumulated/necessary, for a fee determined by market rate.

**1.4 Tires will be received from :** Private Haulers

### 1.5 Describe the methods that will be used to control access to the facility

There are two areas of concern regarding controlling access to the facility; 1) the onsite building and 2) the outdoor storage area. Access to the onsite building will be controlled via standard locking doors, roll-up doors, and bay doors. The outdoor storage area will be controlled using a security fence as indicated on Figure 5.

### 1.6 Describe how vectors will be controlled

The vector attraction issue of concern regarding tire storage is standing water that can collect in the interior of tires. The GreeNu facility only accepts baled tires which are super-compressed and near solid and do not have any areas where water can accumulate. As such, vectors will be controlled by eliminating the potential for standing water to accumulate in the tires. Similarly, no areas where rodents or other small animals could dwell are present in tire bales.

### 1.7 Attach proof of compliance with any applicable ordinances or other requirements of the state or local governments for permits

See Attachment 2

- City of Fernley Special Use Permit (SUP)

## 2. Tire Storage

### 2.1 Estimate the maximum number of passenger tires (PTE’s) that will be stored at the facility at any one time

The table below summarizes the maximum amount of PTEs and all tired derived materials that will be stored at the facility at any one time. As discussed, the tire pyrolysis process results in only four products: 1) Carbon Black, 2) Pyro Oil, 3) Scrap Steel, and 4) Pyrogas. The pyrogas is used onsite as a fuel source as it is produced and therefore there are storage requirements for this material other than and intermediate storage tank. Upon facility shut down no pyrogas is stored.

Material	Maximum Storage Capacity <sup>1</sup>
PTEs – Tire Bales	960,000 PTEs (9,600 Tons)
Carbon Black	580 Tons (two-870 yd <sup>3</sup> silos, 0.33 tons/yd <sup>3</sup> )
Pyro Oil	200,000 Gallons (five-40,000 Gallon Tanks)
Scrap Steel <sup>2</sup>	12 Tons
250 Gallon Propane Tank	250 Gallons

<sup>1</sup>These values used for the development of the Total Closure Cost Estimate (TCC), see Section 4.

<sup>2</sup>Steel will be removed by steel recyclers providing open-top-roll-off containers

**2.2 Tires and processed tire material will be stored: Outdoors**

**2.3 Describe the location of the tire storage area. It must not be located within 10 ft. of any property line or building and shall not exceed 6 ft. in height when within 20 ft. of any property line or building**

The tire storage area is located to the north of the processing facility. The storage area is slightly graded to facilitate proper drainage and will only store tires in baled form. The baled tires will not be stored within 20 feet of any buildings and the max storage height will be 10 feet which is in accordance with the IFC for the storage of tires. See site maps included as Attachment 1.

**2.4 Attach a scaled schematic drawing of the pile arrangement**

Tires will only be stored in only baled form, no loosely stack tires piles will ever be present at the facility. Bales will be stacked appropriately into “blocks” using established safety regulations and guidelines. The baled tire storage arrangement shown on Figure 6 which is included in Attachment 1 is in accordance with the IFC.

**2.5 Describe how 40-foot fire lanes will be established around the perimeter of each stockpile, and how the lanes will be kept clear of flammable or combustible material or vegetation:**

The tires will be stored in baled form only and will be arranged and stacked using established safety regulations and guidelines. The bales will be stacked and arranged into blocks that are compliant with IFC regulations (see Figure 6). As such, the blocks will be arranged such that there are 40-foot fire lanes between blocks as indicated on the site maps provided in Attachment 1. Nothing will be stored in the fire lanes and appropriate measures will be taken to keep lanes clear of any vegetation.

**2.6 Describe how surface water runoff will be directed away from the tire storage area**

Please find drawing C3.1 provided in Attachment 8 provided by Tectonics Design Group (Tectonics) showing the site grading and how the site grading directs precipitation away from the facility and storage areas. Drawing C3.1 also shows all site grading directed to the detention basins located to the east of the facility. Also included in Attachment 8 is a drainage report provided by Tectonics Design for both the on-site and off-site routing of runoff. The detention basin design calculations are provided within the report as well. As can be seen on drawing C2.1 and C3.1 (Attachment 8) provided by Tectonics all flow south of the subject facility will be diverted around the facility via a drainage diversion ditch. This flow will be routed around the facility then back to the natural drainage pattern north of the site.

**2.7 Describe how tires and processed tire material will be stored in accordance with guidelines for indoor tire storage adopted by Nevada Administrative Code 477**

Not Applicable – No tires stored indoors

### 3. Fire Prevention Measures

#### 3.1 Provide the names of all individuals to be contacted in the event of a fire, one of which must be the Fire District for your site

Name	Title	Day Phone	Evening Phone
Scott Tonnemacher	GreeNu Facility Manager	(619) 804-6063	(619) 804-6063
Joann Felt	GreeNu Facility Office Manager	(253) 222-3510	(253) 222-3510
Ray Beem	GreeNu Facility Supervisor	(253) 219-1325	(253) 219-1325
Steve Carr	Interim Fire Chief – North Lyon Fire Protection District	(775) 575-3310	(775) 575-3310

#### 3.2 List all the equipment to be used to control fire and the manner in which it will be used:

Tires bales are inherently at much lower risk for fire than a traditional “tire pile” in which tires are loosely stacked together. As discussed, tire bales are super compressed and very little air is contained within the interior of the tire bale. As such, very little oxygen is available for combustion greatly reducing the chance for ignition. Additionally, the tire bales will be stored in accordance with all IFC regulations which are designed to reduce the chance of a fire.

Furthermore, upon the tire bales arriving at the facility and being stored into “blocks” as discussed in Section 2 of the previous section all exterior and exposed tire bale surface area will be sprayed with EnExa 110/R. EnExa 110/R is a proprietary and patented fire retardant agent which is specifically designed to be used as a pre-treatment fire retarding (i.e. fire prevention) agent. The EnExa 110/R product will be applied by onsite personnel using pressurized spray containers.

In addition to the EnExa 110/R pre-treatment process, ten-5 gallon fire extinguishers will be strategically placed around the tire storage area and on the forklifts that move the tire bales. The fire extinguishers will be equipped with EnExa 110. EnExa 110/R and EnExa 110 are nearly identical, the only difference is EnExa 110/R is designed to be a pre-treatment fire retarding agent whereas EnExa 110 is designed to be a fire suppression agent. The facility operates twenty four hours a day for 365 days a year; as such, GreeNu personnel will be always be onsite and should a fire occur it will be noticed and action will be taken immediately.

It is important to note that the relatively low fire risk associated with tire bales along with storing the bales in accordance with IFC regulations and pre-treating the tires with EnExa 110/R provides an extremely high level of fire prevention/protection. As such, the chance of a tire fire is extremely low and any tire fire that may occur will spread slowly (as a result of the pre-treatment process and inherent flammability properties of tires) and will be quickly extinguished by onsite personnel using the EnExa 110 equipped fire extinguishers.

EnExa 110 has been specially designed for tire fire suppression and has been successfully tested by Underwriters Laboratories (UL). EnExa 110/R has been successfully tested by UL under the “test designation” FR 1000 for the extinguishing of any Class A or B fire, including tire fires. Manufacturer supplied information on EnExa 110/R and EnExa 110 (both products designated as EnExa 110) are included as Attachment 3. Additionally, Edmund Pennartz, who is the President of Alpha Omega R&D LLC which is the supplier of the EnExa products, can be reached at [edmundp@sbcglobal.net](mailto:edmundp@sbcglobal.net) or at 310-925-1027.

The onsite building will be equipped with an automated fire suppression system. The suppression system will be equipped with EnExa 110. A letter from the State Fire Marshall approving the use of EnExa in the automated fire suppression system is included as Attachment 9.

**3.3 Develop a list of procedures that will be used if a fire occurs at the facility, and measures to minimize the spread of fire. Use additional pages as necessary. Attach a letter of approval of the fire protection procedures from the local emergency planning committee**

Refer to Section 3.2 for fire prevention and control measures.

North Lyon County Fire Protection District Letter of Approval: See Attachment 4

GreeNu Commodities Emergency Response Plan: See Attachment 5

**3.4 Describe how surface and ground water will be protected from potential runoff resulting from extinguishing a fire at the facility**

The primary method in which surface and ground water will be protected from the extinguishing of a tire related fire is through taking steps that greatly reduce the chance of a tire fire. As discussed in Section 3.2 the tire bales will be pre-treated with EnExa 110/R and stored in accordance with all IFC regulations. As such, surface and ground water are primarily protected from “fire extinguishing” runoff by greatly reducing the chance of a tire fire (and elimination of tire extinguishing runoff) by properly storing the tires in accordance with IFC regulations and pre-treating the tire bales with EnExa 110/R.

Furthermore, in that unlikely event of a tire fire traditional fire extinguishing methods in which massive amounts of water are utilized to extinguish the fire would not be used as these methods are not effective on tire fires. As discussed in Section 3.2 this facility will be using a new UL tested product (EnExa 110) from Alpha Omega R&D LLC that has been successfully tested for the extinguishing of any Class A or B fire, including tire fires. The EnExa 110 product is specifically designed to rapidly extinguish fires without producing large amounts of foam or water runoff (see manufacturer provided information in Attachment 3). As such, the potential runoff from the extinguishing of a tire fire using the EnExa product is minimal and any runoff will flow into the detention basins located to the east of the tire storage area (see Section 2.6).

## **4. Financial Assurance**

**Each facility is required to establish a financial assurance mechanism to cover the costs of removing all PTE's from the facility whenever it is necessary in accordance with Nevada Administrative Code 444.68525. Use the information below to evaluate your financial assurance needs and to establish a financial assurance mechanism as described. Attach proof of the financial assurance mechanism to the application.**

### Cost Estimate

Total Closure Cost (TCC) = \$1,215,277.40

See Attachment 6 for detailed TCC calculations and supporting documentation.

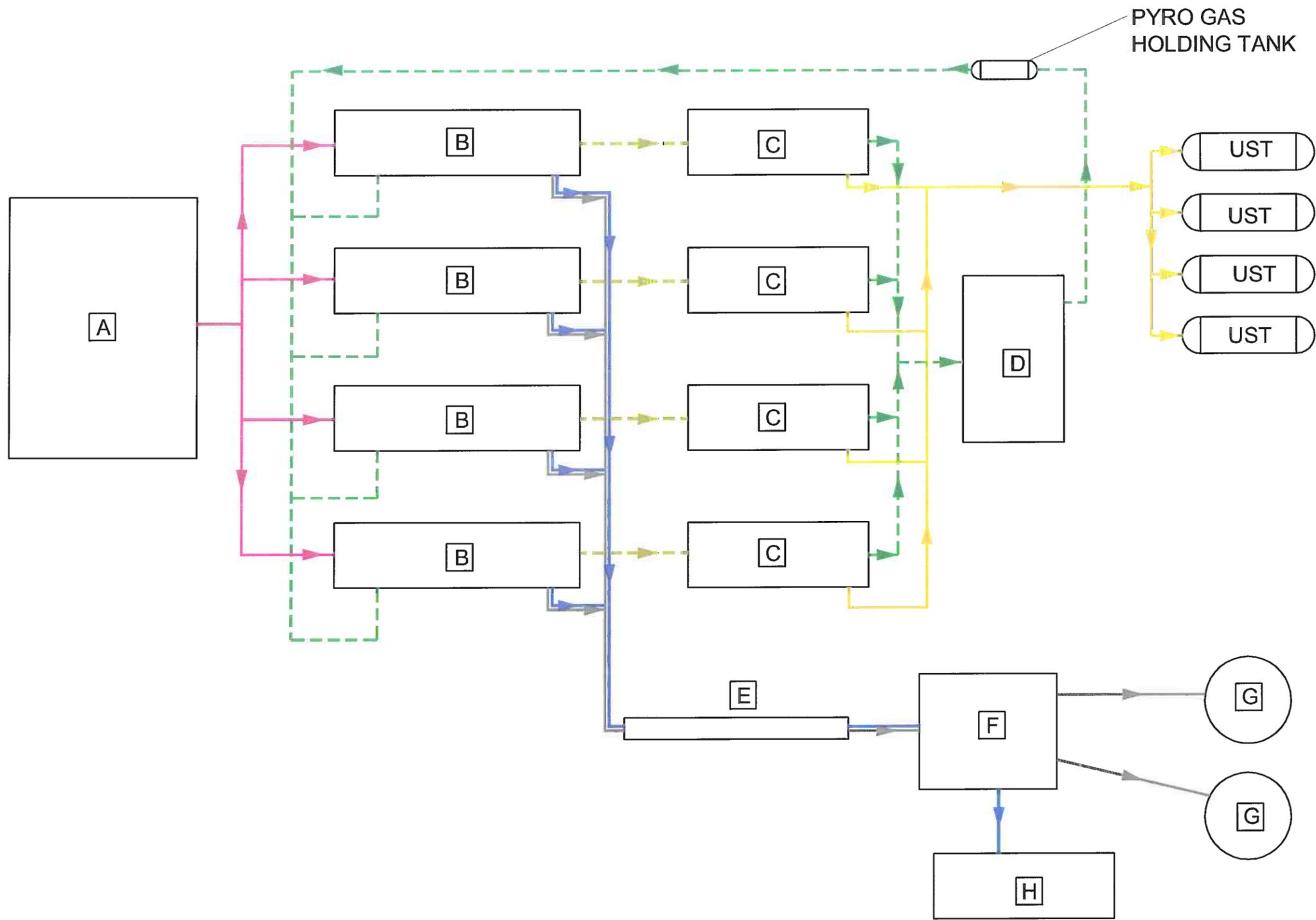
Financial Assurance Mechanism: A Trust Fund has been opened to meet the financial assurance requirements. A copy of the Trust Fund is included as Attachment 7.

# ATTACHMENT 1

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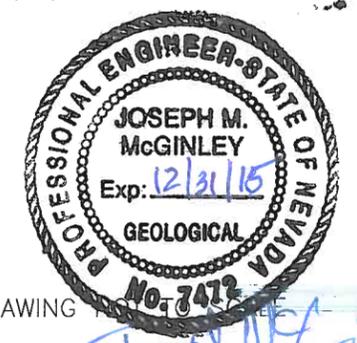
## Figures

# **Figure 1**



**LEGEND**

- TIRE CHIPS
- CARBON BLACK
- STEEL
- - - PROCESS GAS
- - - PYRO GAS
- PYRO OIL
- UST UNDERGROUND STORAGE TANK
- A TIRE SHREDDER
- B PYROLYSIS UNIT (SKID #1)
- C SKID 2 (SKID #2)
- D SULFUR REMOVAL SYSTEM
- E WATER COOLED AUGER
- F METAL SEPARATOR
- G CARBON BLACK SILO
- H STEEL STORAGE



DRAWING

REVISIONS	No.	DESCRIPTION	BY	DATE

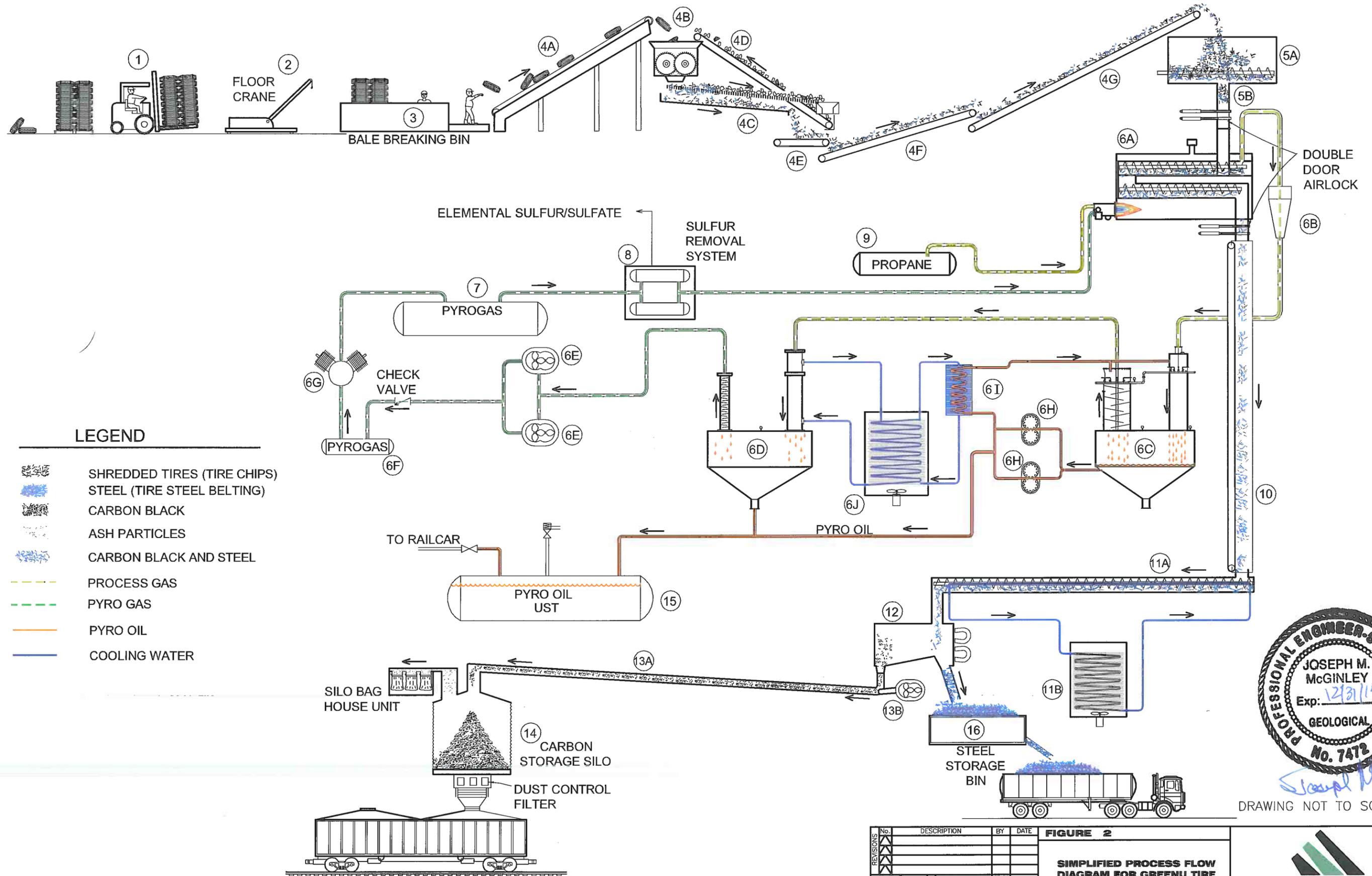
  

REFERENCE	DESIGNED	TD

**FIGURE 1**  
**SIMPLIFIED EQUIPMENT DIAGRAM FOR GREENU TIRE PYROLYSIS FACILITY HAZEN, NEVADA**

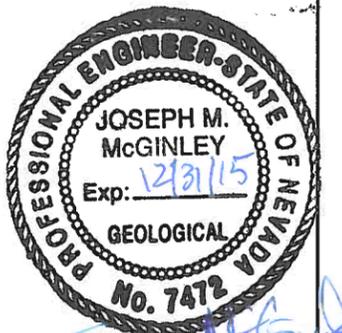


## **Figure 2**



**LEGEND**

-  SHREDDED TIRES (TIRE CHIPS)
-  STEEL (TIRE STEEL BELTING)
-  CARBON BLACK
-  ASH PARTICLES
-  CARBON BLACK AND STEEL
-  PROCESS GAS
-  PYRO GAS
-  PYRO OIL
-  COOLING WATER



DRAWING NOT TO SCALE

REVISIONS	No.	DESCRIPTION	BY	DATE

REFERENCE	DESIGNED	TD

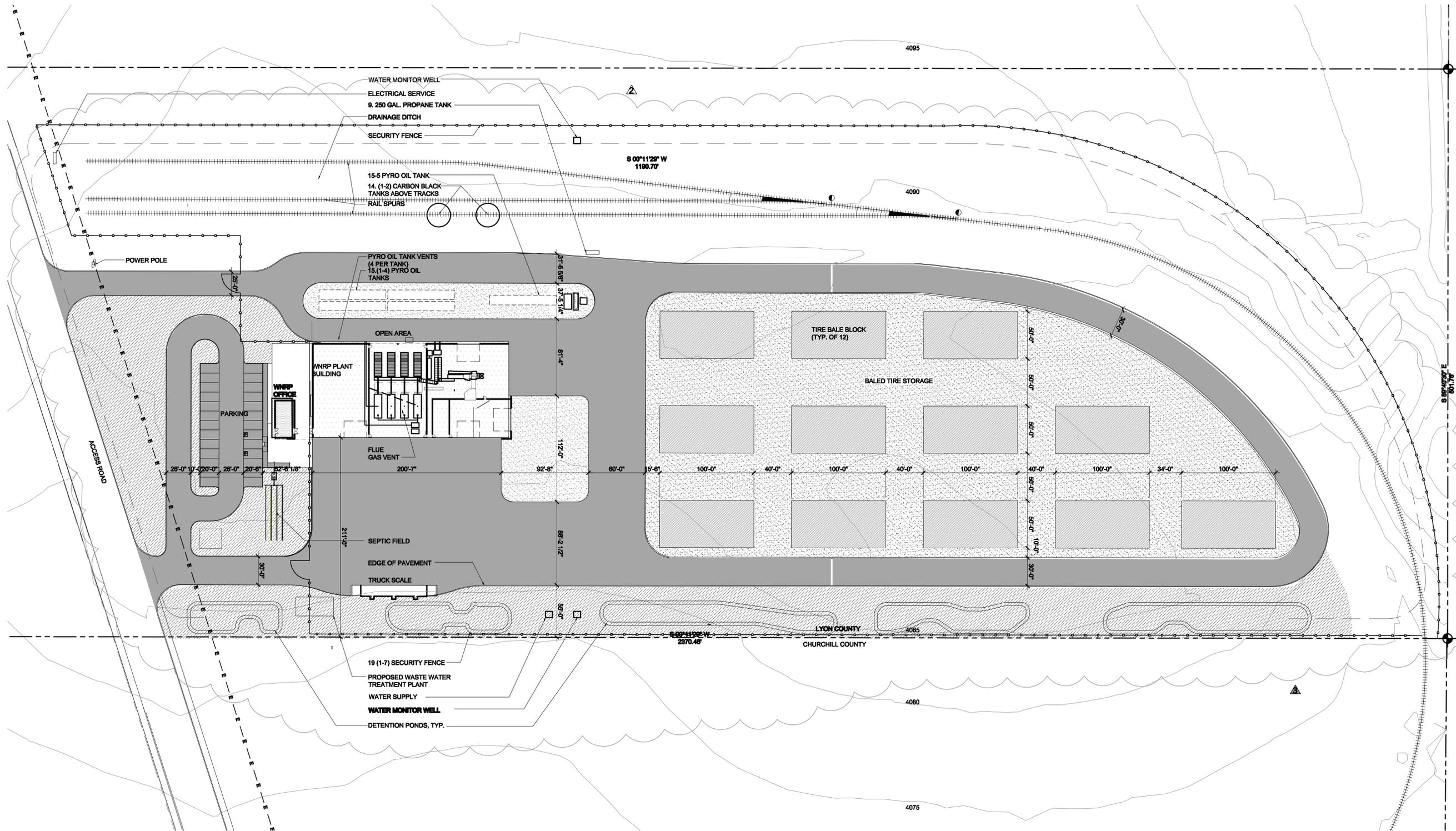
**FIGURE 2**  
**SIMPLIFIED PROCESS FLOW**  
**DIAGRAM FOR GREENU TIRE**  
**PYROLYSIS FACILITY**  
**HAZEN, NEVADA**



## **Figure 3**

WESTERN NEVADA RAIL PARK

HAZEN, NEVADA



1 SITE PLAN  
 SCALE: 1" = 50'-0"

9. ZONE 11 EASTING 320368 NORTHING 4382540	15-2. ZONE 11 EASTING 320370 NORTHING 4382573	18-1. ZONE 11 EASTING 320387 NORTHING 4382599	19-1. ZONE 11 EASTING: 320328 NORTHING: 4382458	19-5. ZONE 11 EASTING: 320480 NORTHING: 4382531	20-2. ZONE 11 EASTING: 320423 NORTHING: 4382524
14-1. ZONE 11 EASTING 320350 NORTHING 4382604	15-3. ZONE 11 EASTING 320366 NORTHING 4382552	18-2. ZONE 11 EASTING 320387 NORTHING 4382594	19-2. ZONE 11 EASTING: 320356 NORTHING: 4382467	19-6. ZONE 11 EASTING: 320474 NORTHING: 4382891	20-3. ZONE 11 EASTING: 320421 NORTHING: 4382632
14-2. ZONE 11 EASTING 320349 NORTHING 4382588	15-4. ZONE 11 EASTING 320441 NORTHING 4382549	18-3. ZONE 11 EASTING 320387 NORTHING 4382599	19-3. ZONE 11 EASTING: 320355 NORTHING: 4382525	19-7. ZONE 11 EASTING: 320326 NORTHING: 4382889	20-4. ZONE 11 EASTING: 320382 NORTHING: 4382632
15-1. ZONE 11 EASTING 320368 NORTHING 4382573	15-5. ZONE 11 EASTING 320368 NORTHING 4382808	18-4. ZONE 11 EASTING 320387 NORTHING 4382585	19-4. ZONE 11 EASTING: 320424 NORTHING: 4382532	20-1. ZONE 11 EASTING: 320382 NORTHING: 4382525	

LEGEND

- FENCE LINE
- CONCRETE PAVING
- ASPHALT SURFACE
- RAIL LINE
- UNDERGROUND TANKS
- ABOVE GROUND TANKS
- STRUCTURES
- LANDSCAPED AREAS



PROJECT NUMBER |  
**ats1202**  
 PRINCIPAL ARCHITECT | JCW  
 DRAWN BY | JCW, EF  
 CHECKED BY |

REVISIONS |  
 1 REV 1 9/2/13  
 2 REV 2 3/10/14  
 3 REV 3 6/6/14

NO. DATE  
**SITE PLANNING**  
 DATE | 19 MAY 2014

**SITE PLAN**  
 SCALE: 1"=50'-0"  
**A 1.1**

6/6/2014 10:02 A.M.

## Figure 4

WESTERN NEVADA RAIL PARK  
HAZEN, NEVADA

PROJECT NUMBER |

ats1202

PRINCIPAL ARCHITECT | JCW

DRAWN BY | JCW, EF

CHECKED BY |

REVISIONS |

1 REV 1 9/2/13  
2 REV 2 3/10/12  
3 REV 3 6/6/14

NO. DATE

SITE

PLANNING

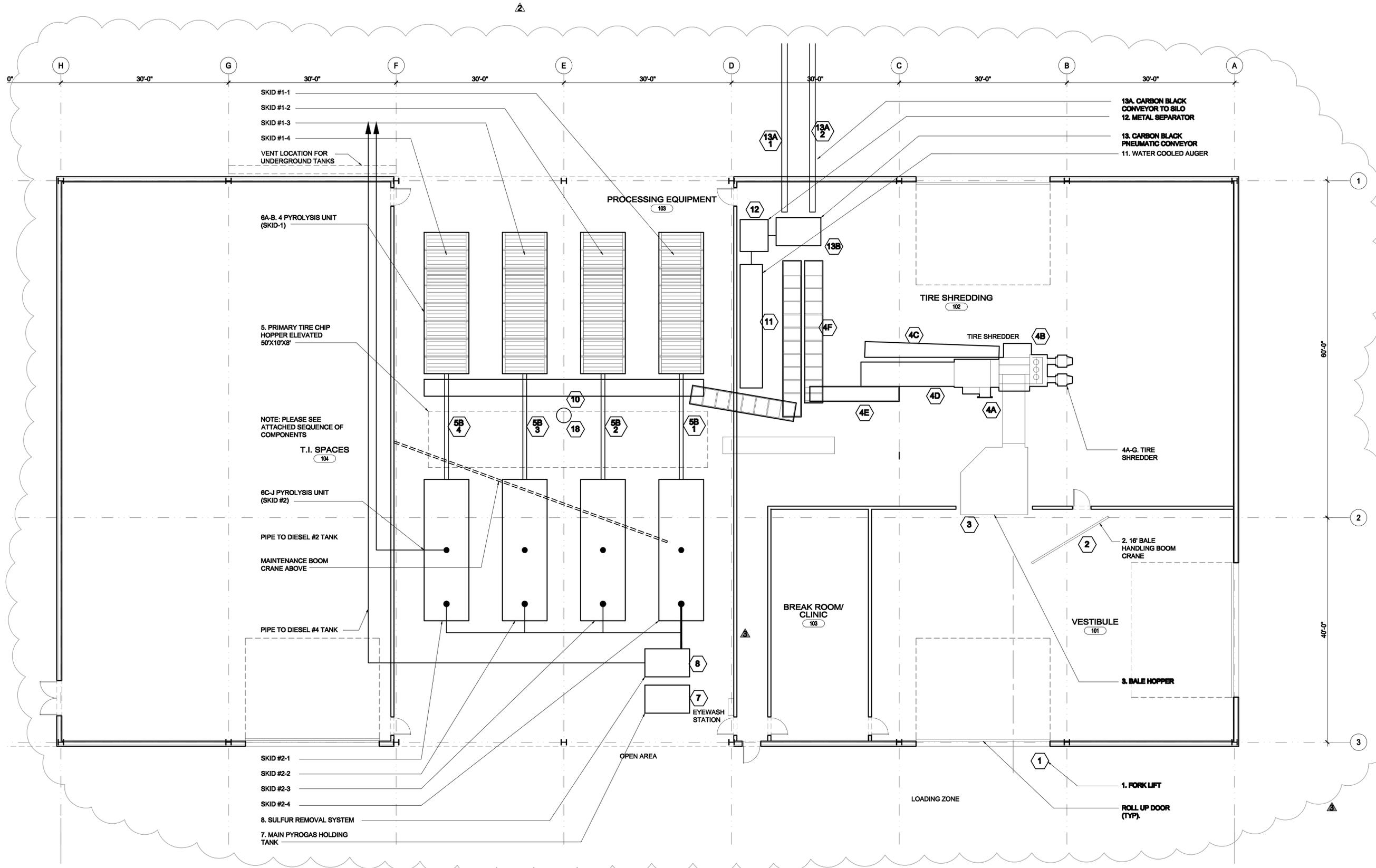
DATE | 19 MAY 2014

FLOOR PLAN

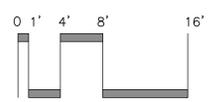
SCALE: 1/8" = 1'-0"

A2.1

6/6/2014 10:04  
A.M.



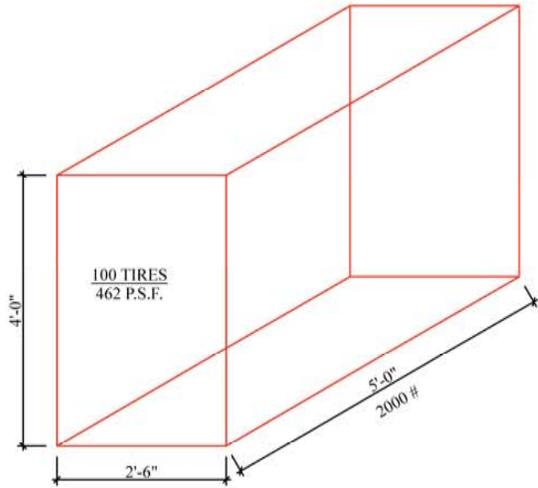
1 FLOOR PLAN  
SCALE: 1/8" = 1'-0"



## **Figure 5**



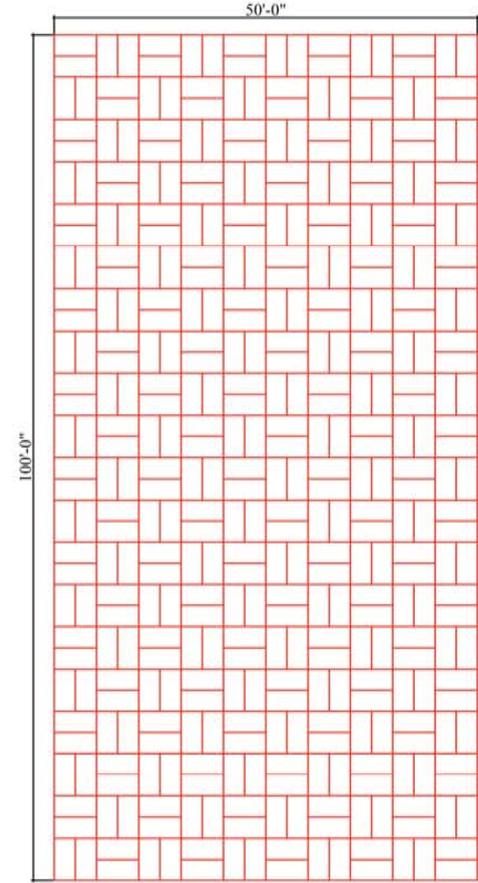
## **Figure 6**



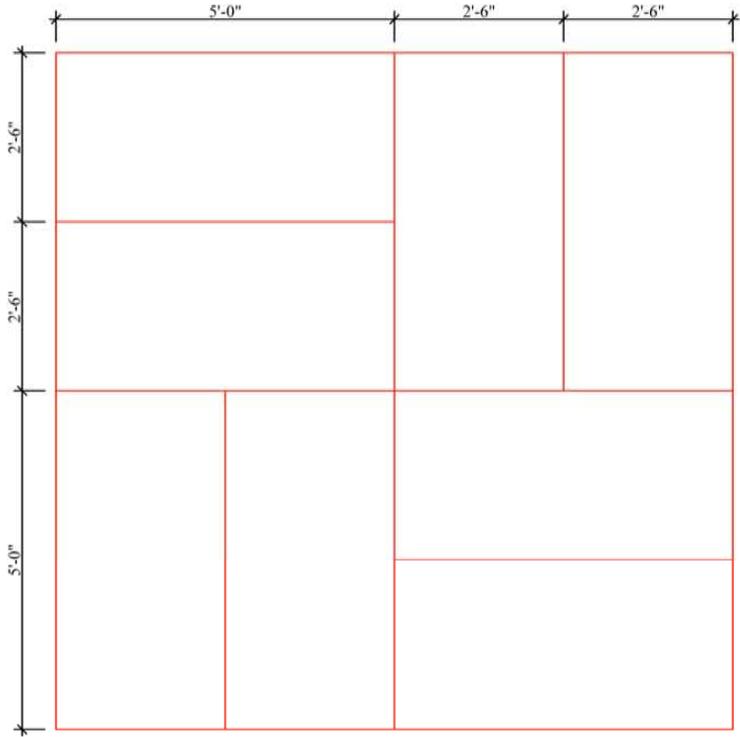
⑥ BALES DETAILS  
SCALE: 1" = 1'-0"

BALE LAYOUT  
 BALE PERIMETER IS 50'-0" X 100'-0"  
 20 BALES X 40 BALES  
 REVERSE EACH LAYER  
 2 LAYERS HIGH FOR 8'-0"

400 BALES PER LAYER  
 800 BALES PER BLOCK  
 80,000 TIRES PER BLOCK  
 960,000 TIRES FOR 12 BLOCKS  
 19,200,000 TOTAL POUNDS  
 (9,600 TOTAL TONS STORED)



BALE LAYOUT  
SCALE: 1/8" = 1'-0"

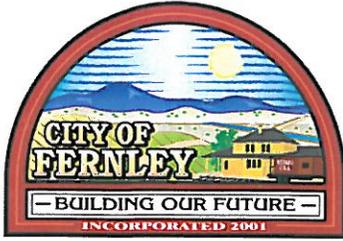


DETAIL SHEET  
SCALE: 1" = 1'-0"

# **ATTACHMENT 2**

**City of Fernley Special Use Permit**

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## COMMUNITY & ECONOMIC DEVELOPMENT

Mojra Hauenstein,  
Director

Building and Safety  
Comprehensive Planning  
Current Planning  
Development Review  
Economic Development

**Matt Rasmussen, PE**  
**Tectonics Design Group**  
10451 Double R Blvd  
Reno, Nevada 89521  
Tel: (775) 824-9988 x11  
Fax: (775) 824-9986

11.8.12

### **Re: GreeNu Tire Recycling Facility SUP 12-32 SUP Approval (5 pages total)**

Dear Matt:

Per our City Council Meeting on 11-7-12 on the above project the 2<sup>nd</sup> trip to LA was waived in lieu of an approved environmental protection agency (EPA) dispersion model, or equivalent analysis as approved in writing by AMEC, which shall be utilized to determine sulfur compound concentrations at various locations (as determined by AMEC) surrounding the proposed project. In addition this project was **approved as conditioned** per the following requirements which will need to be satisfied during building permit, construction and prior to issuance of a Certificate of Occupancy:

**Condition #1:** Development of use shall not be carried out until the applicant has secured all permits and approvals required by:

- a) this development code or any other City ordinances,
- b) State or Federal agencies, including but not limited to all NDEP permits (BAPC & SWMA) conforming to NAC 444A.280-460, NRS 459.520 and other State laws that apply.

**Condition #2:** Condition of Building Permit includes all required NDEP permits in valid possession.

**Condition #3:** No loose tires shall be accepted or stored on site, only baled "feedstock" as described in the SUP application.

**Condition #4:** Conformance to a Fire Response Plan approved by NLFPD is an ongoing condition of SUP issuance and validity.

**Condition #5:** In the event of closure, owner/ operator shall demonstrate financial assurance for clean up and closure of the remaining facility minus feedstock (addressed by NDEP requirements) by placement of bond or other accepted means in an amount agreed upon by City and Applicant.



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Community & Economic Development

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Nevada 89408  
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Fax 775.784.9828  
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**Condition #6:** In reference to NAC 444A.350, the proposed facility will be completed, issued C of O, and fully approved for operation by all regulating authorities ( NDEP, Fire, Building, Planning, Public Works) before ANY waste tire material (feedstock) is placed upon site.

**Condition #7:** Facility shall operate at or below all Odor, Emissions, Pollution & Solid Waste management standards as set by NDEP. Failure to comply with, or violation of any of these standards, which shall be interpreted to include more than two (2) valid, verifiable complaints about odors, emissions, noise or other environmental concerns as described in the SUP application findings within any ninety (90) period, shall cause the SUP to be suspended (operations cease) and subsequently reviewed by City Council for determination of conditions of continued use or revocation.

**Condition #8:** Facility, Site, and Civil improvements shall be designed, built, and operated to conform with all Development Code standards and requirements, all adopted Building Code standards and requirements, Public Works Design Standards, Fire Authority standards and requirements, & NDEP standards as applicable.

**Condition #9:** Facility and Site to be secured and screened per NAC, Fire, Development Code, Building Codes and NDEP requirements.

**Conditions #10:** All previous requests by Director for additional information, data, analysis, reporting, and clarification shall be met to the satisfaction of Director prior to an SUP approval.

Since the information submitted by applicant includes extensive scientific data, expert letters and industry standards addressing the Community's Safety, Health and Welfare concerns, the following is a summary of issues paired up with the required conditions/codes to be met to the satisfaction of City Staff and the third-party Environmentalist prior to the issuance of the Certificate of Occupancy.

Please note that our City Council Presentation exhibits from 9-5-12 need to be referenced in order to satisfy the conditions below:

**Issue 1: Traffic**

Industry Standard (to be met in addition to Federal, State, City codes/laws):

NDOT regulations; upgrade to site entrance completed

Reference: Exhibit '3', item 'C', Tectonics letter, 6/26/12.

→ Clarification: Further break down of your 297 ADT trip calculations per Exhibit '4'.

**Issue 2: Transportation of "in-bound", "out-bound" materials & on site storage**

Industry Standard (to be met in addition to Federal, State, City codes/laws): NDEP (Nevada Department of Environmental Protection) guidelines for containment of on-site storage; NAC 444A.360 & IFC

Reference: Exhibit 'B' p.5 , Exhibit 'F' p.5 and Exhibit '8'.

Additional: The final "out-bound" products in form of Fuel, Carbon Black and Steel are pneumatically conveyed in sealed pipelines from production (plant) to storage and from storage to rail.

- Clarification: A) How is the baled feedstock material that is "in-bound" transferred from rail to plant? B) Is the "Baled Tire Storage" shown outside to the north of site exposed to the elements and what kind of ground surface is Ego-bloc stored upon?

### **Issue 3: Noise**

Industry Standard (to be met in addition to Federal, State, City codes/laws): No Industry standard was referenced by applicant, so meeting NRS 244.363 for Prevention of Excessive Noise & acceptable noise standards in adjacent jurisdictions shall be the acceptable limit.

Reference: Exhibit 'G', expert letter 5/11/12

Additional: Applicant claims 65 dBA max at property line or 0.5 miles from plant whichever is closer. Also, building is proposed to be located 50'-0" lower than the highway, with additional vegetative screening/buffers and building has acoustically insulated walls.

### **Issue 4: Air Quality/ Odor Control**

Industry Standard (to be met in addition to Federal, State, City codes/laws): South Coast Air Quality Standard (SCAQ) which is among the most stringent air emissions standards in USA; also used in LEED certified buildings by US Green Building Council; NDEP Class III Air Permit (applied) & OSHA

Reference: Exhibit '2' p.9-11 Exhibit '6', expert letter 5/23/2012) & Exhibit '7'

Additional: Pyrolysis (conversion) is a closed loop process with 99.9% accountability - see exhibit '2' p. 16.

### **Issue 5: Water Quality**

Industry Standard (to be met in addition to Federal, State, City codes/laws): NDEP (Nevada Department of Environmental Protection) guidelines for water quality and Wastewater Permit from NDEP.

Reference: Exhibit '1', 7/24/12 and Exhibit '5', 6/26/12.

Additional: Plant will not be connected to City Sewer.

Project will house its own wastewater treatment plant permitted via NDEP. Sewer Impact Report is not required.

- Clarification: A: Where do the heavy metals from processing plant go?  
B: What is your water supply source? How much water is treated at Wastewater plant?

### **Issue 6: Sustainability**

- Green Collar job creation, above minimum wage- Exhibit 'D'
- 10 year manufacture warranty; operator GWEECC (Global Waste Energy Conversion Company) includes a risk management performance curve warranty underwritten by one of the largest risk management companies in the world & project will be insured collaterally-Exhibit '2' p.15
- "Clean Up" bond is required by the State to mitigate any negative impacts to the community-Exhibit '2' p.15



- Tentative “feedstock” & “output” material annual agreements-Exhibit ‘2’ p.15
- Spill Prevention and Response Plan-Exhibit ‘F’
- Project is aligned with Fernley’s Strategic Plan, EDawn’s mission and the Governor’s Economic Development vision
- Reduction of landfill use for tire disposal
- Branding of “Waste-to-Energy” industries & “Alternative Energy” projects in our area

**If SUP is approved the following 2 immediate conditions must be met PRIOR to issuance of approval letter:**

**I.C. #1:** Per Attachment 4 of Staff Report, item #5, CED would like to suggest that applicant pay for a 3rd party environmentalist, selected by City of Fernley, to review documentation and data submitted as part of this SUP. Also this same expert would be available at plant start-up to verify that industry standards herein referenced have been complied with. We recommend either of the following Environmental Scientists:

- A) AMEC Tel.775.326.5388 Contact: Noel Bonderson
- B) Stantec Consulting Services Tel.775.398.1233 Contact: Jeff Curtis

**This item has been satisfied since Amec has been selected as the Environmental third-party.**

**I.C. #2:** A site visit (paid by applicant) to the LA County Sanitation Facility which employs Pyrolysis of baled tires as would the proposed plant in Fernley.

Site Visit would be conducted by one (1) Council member, (1) City of Fernley Official and (1) aforementioned third party Environmentalist.

***This condition was waived in lieu of Air modeling mentioned in the first paragraph.***

**Also, Continual Monitor** was added as a condition of approval by City Council per the extracted meeting minutes below:

***“Motion: MOVE TO APPROVE SPECIAL USE PERMIT 12-32 WITH 10 CONDITIONS RECOMMENDED BY STAFF AND THE PLANNING COMMISSION, Action: Approved, Moved by Councilman Eilrich, Seconded by Councilman Parsons***

*Councilman Edgington stated he wanted to see during the review bringing in a third party environmentalist. He wanted to schedule a compliance review audit every 3 - 4 years and verifying they are doing exactly what they said they would do.*

*Councilman Eilrich amended his Motion: TO INCLUDE BOTH AN ANNUAL REVIEW OF THE SPECIAL USE PERMIT AND COMPLIANCE AUDIT EVERY TWO YEARS BY AN INDEPENDENT THIRD PARTY.*

*Associate Engineer Cody Black suggested the condition of an ongoing monitoring program to address environmental effects. Then before issuance of any permits, part of the policy of the*



environmentalist on board would be to investigate at the beginning they could help the City, funded by the developer, develop a plan. He stated a single monitoring program that is developed at the beginning for the life of the project would be a good way to make it more clean for everyone involved.

Councilman Eilrich amended his **Motion:** TO INCLUDE A SINGLE MONITORING PROGRAM, PAID FOR BY THE DEVELOPER, AND IMPLEMENTED AT THE BEGINNING OF THE PROJECT FOR THE LIFE OF THE PROJECT.

**Motion:** MOVE TO APPROVE SPECIAL USE PERMIT 12-32 WITH 10 CONDITIONS RECOMMENDED BY STAFF AND THE PLANNING COMMISSION, TO INCLUDE BOTH AN ANNUAL REVIEW OF THE SPECIAL USE PERMIT AND A COMPLIANCE AUDIT EVERY TWO YEARS BY AN INDEPENDENT THIRD PARTY, ALSO, TO INCLUDE A SINGLE MONITORING PROGRAM, PAID FOR BY THE DEVELOPER, AND IMPLEMENTED AT THE BEGINNING OF THE PROJECT FOR THE LIFE OF THE PROJECT.

City Attorney Brandi Jensen clarified that there is not a Yearly Annual preapproval of the Special Use Permit unless it is conditioned.

**Vote:** Motion carried by unanimous roll call vote (summary: yes = 4).

**Yes:** Councilman Edgington, Councilman Eilrich, Councilman Parsons, Councilwoman Malloy. Absent: Councilman Chaffin. End."

Per the City of Fernley Development Code 21.070 A-E, the 12 month timeline starts on the date of this letter. We look forward to working with you through the building permit and construction process. Please call with any questions.

Best regards,

  
Mojra Hauenstein, NCRAB  
LEED AP Neighborhood Development  
Community & Economic Development Director  
City of Fernley  
595 Silver Lace Boulevard,  
Fernley, NV 89408  
T. 775.784.9902  
F. 775.784.9828

# **ATTACHMENT 3**

**Manufacturer Supplied Information – EnExa 110 & 110/R**

---



*Pro Bono Público*

## EnExa 110

### Facts and Purpose

**Fact:** *EnExa is the result of a product development which took years of developing and testing*

**Purpose:** EnExa is not being developed as a wetting and/or foaming agent, because the range of applications are going far beyond of any foaming and wetting agents on the market.

**Fact:** *EnExa high speed fire extinguishing regardless of class A or B fires is based upon the quality of a proprietary and patented formula.*

**Purpose:** EnExa 110 has been developed to extinguish fires primarily to the fact of “**heat absorption**”  
EnExa has the unique ability of performing extreme rapid heat extraction from any burning and overheated material regardless of solids or liquids, without generating large amount of foam or wasting important water resources.

**Fact:** *In class B fires EnExa has proven to be superior to similar products on the market*

**Purpose:** Fast flame knock down and extinguishment, high burn back resistance and fire security, it is special designed to saponify (not emulsifying) only a thin layer of the hydrocarbon liquid, to form a tight blanket to prevent the production and escape of the flammable gases, this thin film will reseal when interrupted.

**Fact:** *EnExa has been specially designed for Rubber and Tire fires*

**Purpose:** Extreme rapid extinguishing rubber and tires fire, and instant reduction of toxic black smog through the unique cooling sealing properties.

**Fact:** *EnExa is non-corrosive and can be premixed in booster tanks*

**Purpose:** Can be premixed in booster tanks without corrosion to pumps and plumbing, and allows Engine- Companies to pull more than one line without having to set up multiple eductor operations

**Fact:** *EnExa reduces the surface tension to 16 dyne/cm which provides a high burn back resistance in class A fire*

**Purpose:** Guaranties to penetrate rapidly into deep seated fires, and eliminates the rekindling of loose structures after departing of the Fire Department

**Fact:** *EnExa is being designed to be used in portable extinguishers and mobile extinguishing systems*

**Purpose:** EnExa is easy to handle, non-toxic, highly effective in apartments, offices, manufacturing shops, kitchen, cars, boats, garages, leaves no messy powder residue to clean up, can be used in 2.5, and 5 Gal. standard UL listed extinguishers.

**Fact:** *EnExa is in the development to be used in small hand held extinguishers*

**Purpose:** Small hand held extinguishers (1000 g and 2000 g) are being used in household, garages, cars, boats, trucks and camping.

**Fact:** *EnExa is UL tested and meets NFPA 18 stringent requirements*

**Purpose:** UL is a recognized independent testing laboratory who is setting standards and recommendations for fire services.

**Fact:** *Independently tested at UL Laboratories in accordance with ASTM E-84 Testing method*

**Purpose:** EnExa is suitable for treatment with extreme deep penetration in to fibrous material and Rubber



*Pro Bono Público*

## EnExa 110

---

### Data Sheet

#### Physical and Chemical Properties

Appearance		Amber Liquid
Specific Gravity @ 20°C		1.10 - 1.18
pH @ 20°C		7.5 - 8.0
Viscosity @ 20°C	mm <sup>2</sup> sec	8
Maximum continuous storage temp.	°C	60
Effect on freeze/thaw		None
Lowest use temperature	°C	0
Sediment as shipped	% v/v	0.05
Sediment after ageing	% v/v	0.1

#### Film Forming Properties

The properties of ENEXA<sup>®</sup> 110 vary depending on the performance characteristics of the equipment used and the operating conditions.

#### Environment

ENEXA<sup>®</sup> 110 is biodegradable and demonstrated very low toxicity to aquatic organisms.

#### Storage

ENEXA<sup>®</sup> 110 is very stable in long term storage when stored properly between Min. 8°C = 32°F and max. 35°C = 95°F.

#### Disposal

ENEXA<sup>®</sup> 110 can be successfully treated in biological waste water treatment systems.

#### Reliability

ENEXA<sup>®</sup> 110 is produced to rigorous standards to ensure consistent fire performance and excellent product reliability.

## EnExa 110 Data Sheet

Page 2

### **Caution**

Do not store EnExa 110 in Aluminum Container under pressure for a prolonged period of time.

### **Recommended dilution factor**

Pretreatment of dry Vegetation, porous fibrous Material, use full strength

For Class A Fire: dilute EnExa 110 into 5 or 8 parts of Water

For Class B Fire: dilute EnExa 110 into 9 parts of Water (1:10)



MITIGATION TECHNOLOGIES INC.  
ENDOTHERMIC FIRE SAFETY

## ENEXA® 110

ENEXA® 110 exhibits a superior quality of a proprietary and patented endothermic film forming agent, for securing, extinguishing and retarding flammable liquids and solids.

ENEXA® 110 is being designed to be used in portable extinguishers or mobile extinguishing systems.

ENEXA® 110 has the unique ability of performing an extreme rapid extraction of heat from burning material regardless of solid or liquids, without generating large amount of foam or wasting important water resources.

ENEXA® 110 produces a vapor sealing film that spreads rapidly over the fuel surface and envelopes solid combustibles to extinguish fires and controls reignition.

- Fast flame knockdown and extinguishment.
- Burn back resistance and fire security.
- High retarding properties on solid combustible.
- Film blanket reseals when ruptured.

### Applications

ENEXA® 110 is used in high risk environments where hydro-carbons are stored, processed or transported. It can be used extensively on Rapid Intervention Vehicles in places where fast extinguishing with limited water resources or foam.

ENEXA® 110 when applied on dry wildland and/or dry combustible grass / brushes in sub-urban settings, prior to approaching fires; it can significantly reduce the flammability of the dry combustibles.

ENEXA® 110 has been shown to be extremely effective extinguishing rubber tires, hot burning oils and greases, engine fires in cars and boats with a minimum of product needed.

### Equipment

ENEXA® 110 is intended to be deluded in a 1: 10 ratio and being used in extinguishing systems with non-air aspirating discharge devices.

ENEXA® 110 can be used with non-aspirating discharge devices such as spray/fog branch pipes and nozzles, and spray/fog sprinklers. However, a non-air aspirating spray nozzle is recommended as the primary method of attack, where instant heat absorption is essential.

### Compatibility

ENEXA® 110 is suitable in combination with:

- Soft or hard, fresh, brackish or sea water
- Dry powder extinguishing agents either separately or as twin agent system.
- Expanded protein based or synthetic foam.

Ref: AB1003/120 page 1 of 2



## SAFETY DATA SHEET

### EnExa - 110

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#### 1 IDENTIFICATION OF THE SUBSTANCE /PREPARATION AND THE COMPANY

---

**PRODUCT NAME:** EnExa 110 Fire Extinguishing and Retarding Agent

**PART NO:** 37147

**SUPPLIER:** MTI Research & Development  
551 Wedge Lane  
Fernley NV 89408  
USA

**TEL:** 0+ (775) 546-3181

**EMERGENCY TELEPHONES:** N/A

---

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

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##### COMPOSITION COMMENTS:

Name	Concentration	CAS Number	Risk Phrases
Citric Acid	2.5 – 4.1 %	77-92-9	
DAP	8.0 – 12.0 %	7783-28-0	
Urea	7.2 – 9.5 %	57-13-6	S-2
Potassium Hydroxide	0.5 – 2.5 %	1310-58-3	S-24
Non-Toxic proprietary Aqueous solution of organic and in- organic Compounds.	2.5 – 6.5 %	N/A	S-46

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#### 3 HAZARDS IDENTIFICATION

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**CRITICAL HAZARDS:** Nil

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#### 4 FIRST AID MEASURES

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**INHALATION:** Remove person to fresh air. If not breathing give artificial respiration. If breathing is difficult, get immediate medical attention.

**INGESTION:** Drink plenty of water. Seek medical attention if discomfort occurs.

**SKIN:** Wash promptly with soap and water. Remove contaminated clothing.

**EYES:** Flush with generous amounts of water, if irritation occurs, seek medical attention.

---

## 5 FIRE FIGHTING MEASURES

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**EXTINGUISHING MEDIA:** This material is not flammable

**COMBUSTION PRODUCTS:** Nil

**FIRE-FIGHTING PROCEDURES:** Not Applicable

---

## 6 ACCIDENTAL RELEASE MEASURES

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**SPILL CLEAN UP METHODS:** Substance can create slippery surface

Absorb with vermiculite, sand or earth and place into containers for safe disposal

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## 7 HANDLING AND STORAGE:

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**USAGE PRECAUTIONS:** See data Sheet

**STORAGE PRECAUTIONS:** Store in original container. Do not Store below 8°C and above 35°C

---

## 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

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**EYE PROTECTION:** Avoid mist or vapour

**HAND PROTECTION:** Nil.

**SKIN PROTECTION:** Nil.

**RESPIRATORY PROTECTION:** Avoid inhalation of mist or spray.

**INGESTION:** Do not eat, smoke or drink when using this product. Wash hands before eating, using toilet and at the end of working day.

**VENTILATION:** Only use with adequate ventilation.

---

## 9 PHYSICAL AND CHEMICAL PROPERTIES

---

**APPEARANCE AND ODOUR:** water clear  
**PH LEVEL:** 7.8 – 8.0  
**BOILING POINT:** 110°C  
**MELTING POINT:** Not Applicable  
**FLASH POINT:** None  
**AUTO FLAMMABILITY:** None in boiling  
**VAPOUR PRESSURE:** Not determined  
**WATER SOLUBILITY:** 100%  
**VISCOSITY:** Not Established  
**REFRACTIVE INDEX:** Not Established  
**SPECIFIC GRAVITY:** At 25°C 1.15 g/ml  
**VAPOUR DENSITY:** Not determined  
**VOLATILE ORGANIC COMPOUNDS:** Nil  
**EVAPORATION RATE:** Not determined  
**PERCENT VOLATILE:** Nil  
**DENSITY:** 9.6 lb per US Gallon

---

## 10. STABILITY AND REACTIVITY

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**CONDITIONS TO AVOID:** Reactive metals Aluminium.  
Do not mix with chlorine bleach or other products containing sodium hypochlorite / strong oxidisers

**DECOMPOSITION PRODUCTS:** None

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## 11. TOXICOLOGICAL INFORMATION

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**HEALTH HAZARDS, GENERAL:** This product is non-toxic.  
**EFFECTS FROM INHALATION:** None stated.  
**EFFECTS FROM INGESTION:** Not Established  
**EFFECTS FROM SKIN CONTACT:** Not Established  
**EFFECTS FROM EYE CONTACT:** Not Established

**OTHER EFFECTS:** Nil

---

## 12 ECOLOGICAL INFORMATION

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**ACUTE TOXICITY DATA:** Oral LD<sub>50</sub> >5000mg/kg  
LC<sub>50</sub> 2.86 ml/L *Ceriodaphnia dubia*  
LC<sub>50</sub> 2.20 ml/L *Pimephales promelias*  
Dermal Primary irritation index 1.13  
This substance is non-toxic i.a.w. OECD Guideline 203  
No evidence of bioaccumulation or tainting of seafood  
This substance is biodegradable i.a.w. OECD Guideline 301 A-E

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## 13 DISPOSAL CONSIDERATIONS

---

**DISPOSAL METHODS:** Dispose of in accordance with Local Authority requirements.  
Discharge spent solutions to waste water treatment system.

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## 14 TRANSPORT INFORMATION

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**UN No:** Not Applicable  
**UK ROAD/SEA FRIEGHT (IMO) CLASSIFICATION:**

**SUBSTANCE IDENTIFICATION NUMBER:** Not Applicable  
**CLASS:** Not Applicable  
**PACKING GROUP:** Not Applicable  
**PROPER SHIPPING NAME:** Not Applicable  
**CDG-ROAD (if applicable):** Not Applicable

**ADR/RID CLASSIFICATION:**

**CLASS:** Not Applicable  
**ITEM NUMBER:** Not Applicable

**ICAO/IATA CLASSIFICATION:**

**CLASS:** Not Applicable  
**SUB RISK:** Not Applicable  
**PACKING GROUP:** Not Applicable

**PROPER SHIPPING NAME:** Not Applicable

---

**15. REGULATORY INFORMATION**

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**SYMBOLS(S):** None

**RISK PHRASES:** Not classified

**SAFETY PHRASES:** S-2 Keep out of reach of children  
S24 Avoid contact with skin. After contact with skin, wash promptly with plenty of water.  
S-46 Drink plenty of water. Get medical attention if discomfort continues.

**UK REGULATORY REFERENCES:** Health & Safety at Work Act 1974

**UK ENVIRONMENTAL LISTINGS:** Rivers (Prevention of Pollution) Act 1961  
Control of Pollution (Special Waste Regulations) Act 1980

**EC DIRECTIVES:** Substances Directive 67/548/EEC,  
General Preparations Directive 88/379/EEC

**STATUTORY INSTRUMENTS:** Chemicals (Hazard Information and Packaging for Supply) Regulations.  
Control of Substances Hazardous to Health Regulations 1999

**APPROVED CODE OF PRACTICE:** Classification and Labelling of Substances and Preparations Dangerous for Supply.  
Product toxicological review 16 CFR 1500 (USA)

**GUIDANCE NOTES:** Occupational Exposure Limits EH40 latest issue.  
CHIP for everyone HSG (108)

---

**16 OTHER INFORMATION**

---

**USER NOTES:** To be used as a water additive for fire retarding and extinguishing. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief accurate and reliable as of the date indicated

**INFORMATION SOURCES:** Clayton, G.D. and F.E.: Patty's Industrial Hygiene and Toxicology Volumes I-III (1991).  
H&S Executive: Occupational Exposure Limits (EH40/latest issue).

**REVISION DATE:** 15<sup>th</sup> April 2003

# **ATTACHMENT 4**

**North Lyon County Fire Protection District Letter of Approval**

---



## North Lyon County Fire Protection District

195 East Main Street  
Fernley, Nevada 89408  
District Office (775) 575-3310 District Fax (775) 575-3314

**Directors**  
Debbie Skinner  
Jon Osborn  
Vance Edan  
Ed Heston

Darryl Cleveland, Fire Chief

Mr. Kevin Rose  
Greenu Commodities LLC  
11000 Hwy 50  
Fernley, NV 89406

December 4, 2012

Dear Mr. Rose:

The North Lyon County Fire Protection District has reviewed your proposed sight plan and fire mitigation/response plan for storing baled feedstock tires at your plant sight in Fernley. We have found your site plan and storage plan to comply with the International Fire Codes as well as meeting our satisfaction for mitigation/response plan in the event of fire.

Therefore, as the Authority Having Jurisdiction for fire and life safety within North Lyon County and the City of Fernley, and having met the intent and purposes outlined within the International Fire Codes, 2006 edition, for storage of "baled" tires I am approving your request.

If we may be of any further assistance please let us know.

A handwritten signature in black ink, appearing to read "Darryl Cleveland".

Darryl Cleveland, BS, LP  
Fire Chief

# **ATTACHMENT 5**

## **GreeNu Emergency Response Plan**

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# GreeNu Commodities Emergency Response Plan

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December 18, 2012

Attn: Fire Chief Darryl Cleveland, Scott Huntley

North Lyon County Fire Protection District

195 E. Main Street

Fernley, NV 89408

Enclosed are the combined Emergency Contingency Plan (ECP) and Spill Prevention Control and Countermeasure Plan (SPCC) for the GreeNu Commodities Class III hazardous waste storage and treatment facility in Fernley, NV. This plan provides information for mitigating and controlling the effects of an uncontrolled fire, explosion, or spill originating from the facility. In order to properly familiarize you with the enclosed Contingency Plan, GreeNu requests that you contact us directly at your convenience to go over it in detail and suggest improvements.

Please indicate that you have received this plan by signing and returning this letter in the addressed envelope provided. We assume that you will provide services to the GreeNu Commodities Facility in the event of an emergency. Formal refusals to provide such services must be provided in writing so we can work on alternate plans.

EPA Oil Pollution Prevention Regulation: Dana Stalcup, (703) 603-8735 or the Spill Prevention, Control, and Countermeasures (SPCC) Information Line at (202) 260-2342 OSHA regulations and standards: Contact either your regional or area OSHA office MMS Facility Response Plan Regulation: Larry Ake, (703) 787-1567 EPA Risk Management Planning Regulation: William Finan, (202) 260-0030 RCRA Contingency Planning Requirement: Contact the RCRA, Superfund, and Emergency Planning and Community Right-to-Know Act (EPCRA) Hotline (see above)

If you have questions, please contact me at (253) 307-4339 or [krose@gwecc.com](mailto:krose@gwecc.com).

///Signed///

Kevin Rose

Director, GreeNu Commodities LLC

# GreeNu Commodities Emergency Response Plan

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Enclosure

CONTINGENCY PLAN

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# GreeNu Commodities Emergency Response Plan

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# GreeNu Commodities Emergency Response Plan

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Appendix 1 Letter of Authorization - Emergency Coordinators

Appendix 2 Letter of Arrangement, Coordination Agreements

## GREENU EMERGENCY CONTINGENCY PLAN

### Preface

The National Response Team (NRT) has developed Integrated Contingency Plan (ICP) Guidance, also known as “one plan” guidance to provide a way to consolidate multiple plans that a facility may have into one functional emergency response plan. It has three parts, a plan introduction, a core plan that serves as the primary response tool and a series of annexes that provide more detailed supporting information and regulatory compliance documentation.

In accordance with Title 40 of the Code of Federal Regulations 264, Subpart D, Contingency Plan and Emergency Procedures, the following plan will be used in the event of an emergency involving hazardous materials and wastes at GreeNu Commodities- Fernley.

### **Part I: Plan Introduction and Purpose**

The intent of the Emergency Procedure and Spill Prevention Control and Countermeasure (SPCC) Plan is to satisfy the requirements of OSHA’s Emergency Response to Hazardous Substance Releases (29 CFR 1910.120 (q)) and Flammable and Combustible Liquids handling (29 CFR 1910.106), the Clean Water Act (CWA), the Resource Conservation & Recovery Act (RCRA), the Emergency Planning and Community Right-to-Know Act (EPCRA) which enables federal, state, and local authorities to effectively prepare for and respond to chemical accidents and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLA is a federal program designed to cleanup abandoned hazardous waste sites so recording any spills that may occur on site falls under that law. Moreover, the SPCC plan was prepared to satisfy EPA regulations on Oil Pollution Prevention (40 CFR Part 112) and on Contingency Plan and Emergency Procedures for hazardous waste generators and treatment, storage and disposal facilities [40 CFR 262.34 (a), 262.52 (a) and 265.52 (a)]. The SPCC Plan identifies potential

## GreeNu Commodities Emergency Response Plan

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sources of oil and hazardous substances and the measures required to prevent and contain any accidental discharge resulting from equipment or storage facility failure.

Further information and contacts regarding the EPA Oil Pollution Prevention Regulation is available from Dana Stalcup, (703) 603-8735 or the Spill Prevention, Control, and Countermeasures (SPCC) Information Line at (202) 260-2342. OSHA regulations and standards: Contact either the regional or area OSHA office. MMS Facility Response Plan Regulation: Larry Ake, (703) 787-1567 The EPA Risk Management Planning Regulation: William Finan, (202) 260-0030 The RCRA Contingency Planning Requirement: Contact the RCRA, Superfund, and Emergency Planning and Community Right-to-Know Act (EPCRA) Hotline (800) 424-9346 (TDD: (800) 553-7672).

The purpose of the Emergency Contingency Plan is four-fold:

- Emergency Guidance: - To act as a guide during actual emergency situations.
- Hazard Minimization: - To minimize hazards to human health and the environment from fires, explosions, or any structures, or to the air or soil.
- Mutual Aid: - To familiarize local emergency response personnel (i.e., sheriff, fire, and rescue departments, hospital and government personnel) with the types or materials handled and internal emergency response procedures.
- Training: - To acts as a training guide for employees to familiarize them in proper procedures to implement during an actual emergency situation.

Several copies of this plan are maintained at the Fernley facility at all times for use during an emergency. In addition, a copy will be submitted to the following agencies:

Lyon County Sheriff

North Lyon County Fire Protection District (NLCFPD)

Lyon County Emergency Management Director

Renown Medical Center

Nevada Division of Environmental Protection (NDEP)

# GreeNu Commodities Emergency Response Plan

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## 1.0 GENERAL FACILITY DESCRIPTION

### 1.1 Facility Identification, Location and Site Plan

GreeNu Commodities LLC-Fernley is located approximately 7 miles East of Fernley, Nevada in the area known as the Western Nevada Rail Park along Alternate Highway 50, 4 miles West of Hazen, Nevada. The Fernley facility is a Class III hazardous waste storage and treatment facility engaged in the following functions:

### 1.2 Facility Operations

1. GreeNu Commodities accepts scrap vehicle tires from various sources from up to 11 major metropolitan areas within a one day transport time from Fernley and come on site via commercial truck or rail. Waste tires originate from numerous sources including tire and car dealers, car and truck fleet operators, car repair shops, car dismantlers, industrial tire users, and waste tire stockpiles. Scrap/Waste tire processors accept whole scrap tires from their sources and compress them into 2-cubic yard, 1 ton bales of 100 tires with a baling machine and steel wire. The bales are typically 2.5' x 2.5' x 5' with volume reduction at 5:1 and are generally called enviro-blocks or eco-blocks. Loose tires have been associated with fire hazards and water born insect problems but baling them eliminates those risks. Tires must come as bales as GreeNu does not accept loose tires.
2. Up to 1 million tires that come as 10,000 baled eco-blocks will be stored on site to ensure a steady stream of tires as the tire shredding and pyrolysis machines will operate 24/6 and consume 500,000 tires per month, so a million tires is only a 60 day supply. The tires are stored on the premises and then undergo a pyrolysis process which is the thermal decomposition of an organic feedstock under the exclusion of ambient oxygen. Typical products of scrap tire pyrolysis are hydrocarbon gases and oils, low grade carbon black and steel. The gases are generally called syngas with a composition similar to natural gas and can be run through condensers to be turned into the equivalent of Diesel #2 & #4 or used as a gaseous fuel for the pyrolysis burner. Along with carbon black, the diesel fuels are temporarily stored in tanks until shipped out via rail tank cars. The steel goes out as scrap via truck.
3. Storage of hazardous materials and waste in tanks and containers. GreeNu is planning for a 100,000 gal tank to store the diesel #2 fuel, a 35,000 gal tank to store the diesel #4 fuel and a 2,100 cubic yard tank to store the carbon black. These storage tanks will be located outside the facility along the rail spur for air conveyance of the carbon black into hopper cars pump feed into the tank cars for the diesel fuels. There is also spill containment areas around the tanks and under the rail tracks for the loading of the fuels into rail cars on a rail spur on site. See site plan.

# GreeNu Commodities Emergency Response Plan

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## 1.3 Hazardous Wastes Handled at the Facility

Scrap tires that have been baled are NOT considered to be HAZMAT however, general categories of hazardous waste are produced at GreeNu Commodities LLC and relate to hydrocarbon gases that are compressed and then liquefied through condensers to create diesel #2 & #4. Specifically, fuel oil (no. 1,2,4,5, or 6) which is code 1993, methane (compressed) code 1971 or hydrocarbon gas mixture compressed, code 1964 or liquefied, code 1965 are produced and stored on site as a byproduct of pyrolysis production and stored temporarily until removed by rail cars.

## Part II: Core Emergency Response Plan

### 2.0 EMERGENCY COORDINATOR RESPONSIBILITIES

The first step in responding to a spill, fire or explosion involving hazardous waste is an established, well-structured chain of command of trained, experienced personnel. Such a chain of command has been established at GreeNu Commodities- Fernley and is described in this Section.

At all times, there will be at least one person, either on the facility premises or on call, who will be responsible for coordinating all emergency response measures. This person will be called the Emergency Coordinator (EC), and will have full authority to commit all resources needed to carry out the measures provided in this plan.

In case of an imminent or actual emergency at the facility, the Emergency Coordinator is thoroughly familiar with this Contingency Plan, all operations and activities at the facility, the location and characteristics of the materials and wastes handled on site, the location of all facility records, the facility layout, and the location of all emergency response and spill cleanup equipment.

In the event of an emergency, the Emergency Coordinator must immediately:

1. Activate internal facility alarms or communication systems to notify all facility personnel.
2. Ensure that all personnel are accounted for and isolated from danger.
3. Arrange for emergency services for any injured personnel.
4. Notify state or local emergency response teams if their help is needed.
5. Decide whether an evacuation of the facility and/or surrounding areas is necessary.

# GreeNu Commodities Emergency Response Plan

---

## Table 2-1 Emergency Coordinator list

Emergency Coordinators

Scott Tonnemacher (Primary)

Facility Manager

11000 GreeNu Parkway (Alt Hwy 50)

Fernley, NV 89408

Cell: (619) 804-6063

Joanna Felt (Alternate)

Operations Manager

11000 GreeNu Parkway (Alt Hwy 50)

Fernley, NV 89408

Cell: (253) 222-3510

Ray Beem (Alternate)

Night Shift Supervisor

11000 GreeNu Parkway (Alt Hwy 50)

Fernley, NV 89408

Cell: (253) 219-1325

# GreeNu Commodities Emergency Response Plan

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## 3.0 IMPLEMENTATION OF THE CONTINGENCY PLAN

Where public health or the environment is threatened, the following emergencies would call for the implementation of the Contingency Plan:

- a. Fire/explosion anywhere on premises.
- b. On-site and off-site releases of hazardous wastes or hazardous waste constituents.
- c. The occurrence of natural disasters.

Listed below are detailed examples of the emergency incidents described above.

### a. Fire/Explosion

- Any advanced stage of fire (beyond the incipient stage, as defined in 29 CFR §1910.155(c) (26)) that cannot be easily controlled or extinguished by portable fire extinguishers, or small hose systems.
- A fire in which the use of water or chemical fire suppressant could result in contaminated runoff.
- A fire that causes the release of toxic fumes.
- A fire that spreads and could possibly ignite stored materials/chemicals in other locations on site.
- A fire that could cause heat-induced explosions of materials/chemicals on site. The potential for explosion poses hazards of flying fragments, ignition of other hazardous materials and their release.

### b. Material Release

- A sudden or non-sudden release that poses a threat to public health or the environment or is an uncontrolled release of a reportable quantity of a hazardous substance.
- A release from containment, resulting in soil or surface water or potential groundwater contamination.
- An uncontrolled release originating from a damaged shipment that has arrived at the plant in such a condition.

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- A release of gas to the air originating from an explosion or reaction of materials.

## c. Natural Disaster

- A release or potential for release of hazardous materials caused by earthquake or severe flooding conditions that damage equipment, foundations, structures, or walls.
- A release or potential for release of hazardous materials caused by a severe storm involving high velocity winds or lightning can that damage or destroy containers, storage tanks, and tank transport vehicles such as rail or trucks.

## 4.0 EMERGENCY RESPONSE PROCEDURES

### 4.1 Employee Response

**4.1.1 Employee Response.** Any employee faced with an actual or imminent emergency, will first attend to his/her own safety. The employee will first leave the area via the safest exit and either activate the alarm or notify an on-site supervisor. Then, if is safe to do so, he/she will attend to other employees requiring immediate assistance. Locations of telephones/intercoms are shown in Figure G4-1, and alarm signals are listed in Table G4-1. Table G1-2 identifies hazardous material characteristics and appropriate handling procedures. Practice emergency drills during which employees use the various alarms and alarm signals are held on a quarterly basis. These drills will be conducted as part of the Training Plan, as described in Section H. All employees on-site at the Fernley facility must participate in the emergency drills, and they will be documented in the operating record.

For newly hired employees, training in the Contingency Plan will be held prior to the employee working in the active areas of the facility. In all emergency situations (regardless of size or extent), the employee involved in or discovering the situation will first contact the Emergency Coordinator (EC) and provide information as to the location, nature, and extent of the incident. The names, addresses, and telephone numbers of the Primary and Alternate Emergency Coordinators are found in Table G2-1.

### 4.1.2 Emergency Coordinator Response

When faced with an actual or imminent emergency, the emergency coordinator will first evacuate the affected portion of the facility, or, as necessary, the entire facility. The emergency coordinator will then account for all employees and notify the appropriate emergency responders.

## GreeNu Commodities Emergency Response Plan

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Either through direct observation, a review of operating records, manifests, waste analysis reports or chemical analysis, the Emergency Coordinator will identify the character, exact source, amount, or extent of released materials.

The Emergency Coordinator must also assess the possible hazards to human health or the environment that may result from any release, fire, or explosion (e.g. the effects of any toxic, irritating, or asphyxiating gases that are generated) or the effects of any hazardous surface water runoff from water or chemical agents used to control fire. He/she must consider both direct and indirect effects of any release, fire or explosion. The Emergency Coordinator shall use his/her best professional judgment for the assessment of possible hazards. If the emergency threatens human health and/or the environment outside the facility, the Emergency Coordinator must provide the following information to responders:

1. Name and telephone number of reporter
2. Name and address of the facility
3. Time and type of incident (e.g. release, fire)
4. Name and quantity of material(s) involved
5. The extent of any injuries
6. The possible hazards to human health or the environment outside the facility.
7. Medium of release
8. In assessing whether the evacuation of local areas is necessary, the Emergency Coordinator will assess:
  - The nature and toxicity of the material involved in the emergency
  - Prevailing wind
  - Potential for migration outside the facility
  - Possibility of explosion and a pending release of toxic vapors, gases or mists.

During an Emergency

# GreeNu Commodities Emergency Response Plan

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The Emergency Coordinator will take any and all measures he/she deems necessary (e.g. stop operations, isolate containers, etc.) To ensure that fires, explosions or releases do not occur, reoccur or spread to other hazardous waste areas of the facility.

If the facility stops operations, the Emergency Coordinator will monitor for leaks, pressure buildups, gas generation, or ruptures in pipes, valves, or other equipment.

Detention pond and sumps will be monitored during an emergency event.

After an emergency, the Emergency Coordinator will:

- Supervise cleanup efforts, and ensure that the recovered waste or contaminated material is properly treated, stored, or disposed of.
- Ensure that no waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed.
- Make sure emergency and spill cleanup equipment is back in order before operations resume.
- Inspect all emergency equipment listed in the Contingency Plan and certify that said equipment is cleaned and fit for its intended use before operations are resumed.

## **4.1.3 Security Personnel/Answering Service Response**

A privately owned security response service will be employed by the facility. In the event of an alarm from a release, the company calls the facility for confirmation. If no one answers the telephone, a call is initiated to the Emergency Coordinator. The Emergency Coordinator will determine if outside assistance is required and will request the service call the NLCFPD. The service is responsive to fire and medic alarms.

## **4.2 Notification**

Following an incident requiring implementation of the Contingency Plan, the following notifications will be made:

1. Within one (1) hour of event, call Nevada Department of Emergency Management at (775) 687-4240 (24hr phone number), and provide the following:

- Report incident and receive State Incident Number. Write down State Incident Number, person contacted, date and time of day.

## GreeNu Commodities Emergency Response Plan

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2. Within one (1) hour of event, call LCEM at (775) 463-6510 or 302-7088 and:

- Report incident and State incident number, note person contacted, date and time of day.

3. Additionally, the Nevada Division of Environmental Protection (telephone (888) 331-6337 nights/weekends) Air, Water, and/or Hazardous Waste divisions must be notified within 24 hours. Finally, if a reportable quantity is released, the USEPA National Response Center (telephone number (800) 424-8802) must be notified immediately.

4. Within 15 calendar days after an incident requiring Contingency Plan implementation or the release of a reportable quantity, the owner or operator will submit a written report to the Director of Nevada Division of Environmental Protection documenting the following:

- Name, Address and Telephone Number of the Owner or Operator.
- Name, Address, and phone number of the facility.
- Date, Time and Type of Incident, including the name and quantity of materials involved.
- The extent of injuries, if any.
- An assessment of actual or potential hazards to human health or the environment, where applicable.
- Estimated quantity and disposition of recovered material that resulted from the incident.

Also within 15 days, the written follow up report will be sent to the following agencies:

**Nevada Department of Emergency Management**

2525 South Carson Street

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Carson City, NV 89710

**Nevada Department of Environmental Protection**

Bureau of Corrective Actions

Attn: Bureau Chief

901 S. Stewart Street, Suite 4001

Carson City, NV 89701

**Nevada Division of Environmental Protection**

Bureau of Waste Management

Attn: Permitting Supervisor

901 S. Stewart Street, Suite 4001

Carson City, NV 89701

**Lyon County Emergency Management**

Attn: EM Coordinator

18 Hwy. 95A North

Yerington, NV 89447

**North Lyon County Fire Protection District**

Attn: Fire Chief

195 E. Main Street

# GreeNu Commodities Emergency Response Plan

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Fernley, NV 89408

## **Fernley City Council**

P.O. Box 1624

Fernley, NV 89408

### **4.3 Containment and Control of Emergencies**

This plan has been developed and organized in such a way as to afford maximum guidance during an incident of any magnitude. The Emergency Coordinator and personnel employed by PSC Fernley are thoroughly familiar with this document and will follow prescribed procedures in the event of an emergency.

Should an emergency situation arise, the Emergency Coordinator will be notified immediately. Concurrently, all facility personnel will be notified where required. Sheriff departments, federal, state or local agencies or contractors will be notified if their assistance is required.

#### **Fire:**

195 E. Main Street

Fernley, NV 89408

Dial 911

#### **Police:**

Lyon County Sheriff

925 Main Street

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Fernley, NV 89408

(775) 575-2525 Sub Station

(775) 575-2321 Dispatch

**Poison Control:**

Northern Nevada Medical Center

2375 Prater Way

Sparks, NV 89434

(775) 356-4040

**Danger Outside Facility:**

National Response Center

(800) 424-8802

**NV Dept. of Emergency Management**

2525 South Carson Street

Carson City, NV 89710

(775) 687-4240

**Medical:**

Renown Urgent Care

1343 West Newland Drive

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Fernley, NV 89408

(775) 982-6529

**State Police:**

Nevada Highway Patrol

555 Wright Way

Carson City, NV 89710

(775) 687-5300

**Security Company**

Stanley Security

734 Spice Islands Drive

Sparks, NV 89431

(775) 828-9544

**Spill Clean-up:**

PSC

(877) 577-2669

**Lyon County Emergency Management**

18 Highway 95A North

Yerington, NV 89447

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(775) 463-6510

## **Spill Clean Up Alternate**

H2O Environmental

390 Freeport Blvd, #12

Sparks, NV 89431

(775) 351-2387

## **Chemical Information:**

Chemtrec or Chemical Transportation Emergency Center—An emergency response organization established by the US chemical manufacturers association to provide chemical hazard related information on 24-hours basis.

Washington, D.C.

(800) 424-9300

### **4.3.1 Injured or Endangered Employees**

Various medical emergency and first aid equipment is maintained on-site. The general first aid response to medical emergencies and injuries is as follows:

- Move victim to fresh air; call emergency medical care - 911 for emergency ambulance dispatch.
- If not breathing, give artificial respiration.
- If breathing is difficult, give oxygen.
- In case of contact with material remove clothing if necessary, immediately flush skin and eyes with running water for at least 15 minutes and keep warm.

# GreeNu Commodities Emergency Response Plan

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- Remove and isolate contaminated clothing and shoes.
- Administer additional specific first aid as appropriate.
- Keep victim warm and await the arrival of emergency medical response unit.
- Ensure that a description of the incident and the materials involved (provide MSDS or profile) accompanies the victim to the hospital. The MSDS or profile should be provided for the hazardous material.
- The Material Safety Data Sheets (MSDS) and the profiles are maintained at the Fernley facility.

## **4.3.2 Fires and Explosions-Fire/Explosion - Emergency Procedures**

Refer to Table G5-3 regarding Fire Classes and Fire Extinguishers. Refer to Table G1- 2 for identification of hazardous material characteristics and appropriate handling procedures. Depending upon the magnitude of the fire incident and the amount of material involved, the following emergency procedures will be implemented.

### **Small Spill on Fire**

1. Grab fire extinguisher and extinguish flames. If unable to immediately extinguish, sound alarm and leave area. If not extinguished, follow procedures in Section 4.3.2 for large fires.
2. Notify Emergency Coordinator. The Emergency Coordinator will notify the local fire authorities if the Emergency coordinator deems the fire will require additional manpower to manage the situation by dialing 911 on any available phone.
3. If the Emergency Coordinator or one of the alternates is not immediately available to make this determination, the decision to call the fire department falls upon the shift lead or operations personnel in charge at the time of the incident.
4. Eliminate and continue to restrict all sources of ignition so the fire will not re-ignite.
5. Wearing boots, protective gloves, and eye protection, stop leak. Absorb spill with absorbent or pump to standby empty recovery drums.
6. Follow spill cleanup procedures described in Section 4.3.3

### **Oxidizers on Fire**

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1. (Employee) Leave the area via the safest exit, and notify the supervisor in charge of that portion of the facility, the Emergency Coordinator, or Facility Manager whichever supervisor is immediately available.
2. (Supervisor) If safe to do so, grab a water hose, DO NOT USE HALON, CO<sub>2</sub>, DRY CHEMICAL OR FOAMS TO EXTINGUISH FLAMES; oxidizers create their own oxygen. To put out a fire you have to remove the heat/ignition source or eliminate or reduce the flammability of the fuel source. If unable to immediately extinguish, sound alarm and leave area. If not extinguished, follow procedures in Section 4.3.2 for large fires.
3. Notify Emergency Coordinator. The Emergency Coordinator will notify the local fire authorities if the Emergency Coordinator deems the fire will require additional manpower to manage the situation by dialing 911 on any available telephone.
4. If the Emergency Coordinator or one of the alternates is not immediately available to make this determination, the decision to call the Fire Department falls upon the shift lead or operations personnel deems in charge at the time of the incident.

### **Flammable Liquids on Fire**

1. (Employee) Leave the area via the safest exit, and notify the Emergency Coordinator or supervisor in charge of that portion of the facility whichever is immediately available.
2. (Supervisor) If safe to do so, grab compatible fire extinguisher and extinguish flames following procedure outlined in section 4.3.2.1 for small fires. If unable to immediately extinguish, sound alarm, leave area and notify Emergency Coordinator.
3. If the Emergency Coordinator determines the fire will require additional manpower to manage the situation he will contact the fire department by dialing 911 on any available telephone. If the Emergency Coordinator determines the fire is controllable, he/she will contact trained employees.

If fire does not extinguish, all personnel should evacuate the building and wait for the arrival of the fire department following the procedures outlined in section 4.3.2.4 for large fires.

4. If the Emergency Coordinator or one of the alternates is not immediately available to make this determination, the decision to call the Fire Department falls upon the shift lead or operations personnel in charge at the time of the incident.

### **Large Fire or Large Spill on Fire**

1. Sound Emergency Fire Alarm using pull box.

## GreeNu Commodities Emergency Response Plan

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2. Office personnel call NLCLFPD upon sounding of emergency alarm by dialing 911 or calling (775) 575-3310.
3. Notify Emergency Coordinator, (if not already aware of the situation).
4. All personnel will immediately evacuate the building via the nearest exit, whenever the fire alarm sounds. They will not return to their work place until cleared by the Emergency Coordinator.
5. In the event of a release of toxic gases or the potential for explosion, off-site evacuation may be advisable.
6. Determine the most accessible and safest route of approach to the fire. Consider flame migration potential, associated dangers and physical limitations. Attempt to determine nature of burning material using knowledge of tank and container contents.
7. When fire department arrives, delegate to them primary responsibility. Stand by for assistance.
8. Cool nearby tanks with water (being careful of any water reactions).
9. When fire is extinguished, remedy point source to stop flow if it can be done without risk.
10. Absorb spilled material or pump to available tank or empty containers. Use shovel to spread standard industrial absorbent over affected area.
11. Collect contaminated material (i .e., absorbent, dry chemical, rags, etc.) in recovery drums.
12. Decontaminate boots, gloves, goggles, face shields, self-contained breathing apparatus and other reusable emergency response equipment.
13. Cleanup, restore or replace emergency response equipment, and return it to its original location.
14. Inspect emergency equipment as specified in Section 5.0. See Equipment Inspection Form.
15. Label and mark recovery drums in accordance with all applicable hazardous waste rules and regulations.

### **4.3.3 Spills and Releases**

In the event of a spill, leak or release of any kind, the following general steps will be followed:

## GreeNu Commodities Emergency Response Plan

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1. Notify Emergency Coordinator or Alternate (verbal communication).
2. Determine source of leak or spill (Section 3.3.2 of this Plan); immediately identify the character, exact source, amount and area affected by the release. Shut off pump(s) if possible without endangerment of personnel.
3. Eliminate and continue to restrict all sources of incompatible materials or ignition from spill area, and areas down-wind of the spill area.
4. Assessment the Emergency Coordinator will assess possible hazards to human health and the environment by considering both direct and indirect effects of released material.

### **Uncontrolled Spills**

Follow General Spill Procedures identified above.

1. Don appropriate PPE. Type of respirator will be determined by the Emergency Coordinator using published OSHA and NIOSH standards for the materials identified.
2. Identify, remedy and stop point source where possible.
3. Dike spill with Standard Industrial Absorbent as required.
4. Once flow is stopped, pump spilled material to empty tank or recovery drums, or absorb spilled material with Standard Industrial Absorbent. Use shovel to uniformly disperse absorbent over affected area.
5. Collect contaminated material (i.e., absorbent rags, etc.)
6. Decontaminate boots, protective clothing, gloves, and face shield. Dispose of TYVEK suits into a recovery drum with contaminated absorbent.
7. Cleanup, restore or replace spill response equipment, and return it to its original location.
8. Physical inspection of all emergency equipment is required as listed in the Contingency Plan by the Emergency Coordinator to insure the equipment is cleaned and fit for its intended use as specified in the Equipment Manufacturer's Operating Procedures. See Equipment Inspection Form.
9. Label recovery drums in accordance with all applicable hazardous waste rules and regulations.

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10. Observe proper hygiene procedures during decontamination of personnel.

## **Contaminated Spills**

Spills within Diked Tank Storage/Treatment Areas:

1. Immediately notify Emergency Coordinator. He will determine whether toxic or irritating fumes may be formed. The Emergency Coordinator will prescribe appropriate respiratory protection using published OSHA and NIOSH guidelines for the identified material. Activation of the contingency plan is at the prerogative of the Emergency Coordinator based on criteria defined in Section G3.0, Implementation of the Contingency.
2. Emergency coordinator will summon outside assistance as required.
3. Contact laboratory personnel to determine which tanks are available and/or compatible with spilled materials.
4. Pump to appropriate storage tank.
5. All tanks are in bermed containment areas with berms designed to contain 110 percent of the total volume of the largest tank within the berm; escape from the berm is a low probability.
6. Each berm has a sump with a level alarm. The sumps are designed to allow pump out using portable air or electric operated pumps. There are no drains associated with the sump, thus eliminating underground piping that might leak.
7. In the event of a leak or spill, the spilled material is washed into the sump and pumped to the appropriate storage tanks or reactor at the direction of the Emergency Coordinator in conjunction with the laboratory personnel and outside assistance as required.
8. The maximum estimated cleanup time required for such an emergency is one hour for up to the first 300 gallons and an additional hour for each additional 1,000 gallons.
9. Clean and repair spill area thoroughly.
10. The estimated repair time for tanks will vary with the specific flow; however, tanks will not be returned to service until repaired.

**Spills within Truck Unloading Area:**

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1. Immediately notify Emergency Coordinator. He will determine whether toxic or irritating fumes may be formed. The possibility of hazardous vapors always exists from a spill of hazardous materials. The Emergency Coordinator will prescribe appropriate respirators. Activation for the contingency plan is the prerogative of the Emergency Coordinator based on criteria defined in Section G3.0, Emergency Coordinator based on criteria defined in Section G3.0, Implementation of the Contingency Plan.
2. Emergency Coordination will summon outside assistance, such as a spill cleanup contractor, as required.
3. The Emergency Coordinator will determine whether or not the spilled material will remain within the spill control area, and use absorbent material to contain the spill if necessary.
4. Contact laboratory personnel to determine which tanks are available and/or compatible with spilled materials.
5. Pump to appropriate storage tanks.
6. Clean spill area thoroughly.

### **Spills on Container Storage Area**

1. Immediately notify Emergency Coordinator. He will determine whether toxic or irritating fumes may be formed. The possibility of hazardous vapors always exists from a spill of hazardous materials. The Emergency Coordinator based on criteria defined in Section 63.0, Implementation of the Contingency Plan.
2. Emergency Coordinator will summon outside assistance, such as a spill cleanup contractor, as required.
3. The Emergency Coordinator will determine whether or not the spilled material will remain within the spill control area, and use absorbent material to contain spill if necessary.
4. Portable tanks or drums will be maintained to recover any spilled material and wash water.
5. Clean spill area thoroughly.

### **Spills in Solids Receiving Area**

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1. Immediately notify Emergency Coordinator. Activation for the contingency plan is the prerogative of the Emergency Coordinator based on criteria defined in Section G3.0, Implementation of the Contingency Plan.
2. Emergency Coordinator will summon outside assistance, such as a spill cleanup contractor, as required.
3. The Emergency Coordinator will determine whether or not the spilled material will remain within the spill control area, and use absorbent material to contain spill if necessary. Containment in the Solids Receiving Area is adequate to fully contain the largest possible spill.
4. Clean spill area thoroughly.

## **4.3.4 Damaged Shipments**

Damaged shipments leaking through the vehicle bed will be immediately placed in secondary containment. Refer to Section G4.3.3 for this portion of the response. The vehicle route will be retraced to determine if waste was released off-site. Mass balance computations will be conducted, if feasible.

## **4.4 Prevention of Recurrence**

The EC will take all necessary steps to ensure that a secondary release, fire, or explosion does not recur after the initial incident. The EC will ensure that no wastes that may be incompatible with the released material will be treated or stored in the affected area. Waste compatibility is determined in accordance with Section C2.0,

## **Waste Analysis Plan**

If the facility stops operations in response to a fire, explosion or release, the EC will monitor associated tanks for leaks, pressure build up, gas generation, or leaks and for ruptures in valves, pipes, or other equipment until the emergency has ended and normal operations can resume.

The EC together with the assistance of PSC - Fernley Engineering, Operations, and Environmental, Health and Safety Departments will evaluate the incident to understand why and how the incident occurred and what future modifications can be initiated to prevent a recurrence of the same or a similar situation. Evaluations will include equipment design, operational procedures, response tactics and personnel safety.

## **5.0 EMERGENCY EQUIPMENT**

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40 CFR 264.52(e) 40 C.F.R. requires that the Fernley facility maintain a list of all emergency equipment at the facility. In addition, the location of each piece of equipment must be specified along with a brief outline of its capabilities. At a minimum, this equipment must include:

- An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel.
- A device, such as a telephone (immediately available at the scene of operations) or a hand held two-way radio, capable of providing immediate emergency instruction (voice or signal) to facility personnel.
- Portable pumps, fire extinguisher, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas or dry chemicals), spill control equipment and decontamination equipment.
- Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

With regard to preparedness and prevention, the following emergency response equipment is maintained at PSC - Fernley:

## **Communications Equipment and Alarms**

- Telephones are available near the scene of operations. Each department has a phone with a list of emergency telephone numbers.
- A phone operated public address system is maintained at this facility to provide immediate instruction to all personnel.
- A manually operated air horn is maintained in a cabinet near the entrance to the offices in the event the PA system is or becomes inoperative.

## **Fire Control Equipment**

The following firefighting equipment is available:

- Fire hydrants are located on the premises for fire truck link up and use.
- 12-20 pound ABC-rated Fire Extinguishers are located in the plant (See Figure G4-2)
- Main building has a fire sprinkler system throughout.

# GreeNu Commodities Emergency Response Plan

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- Fire alarms are automatically activated when the sprinkler system is activated.

The following spill control equipment is available:

- The following spill control equipment is available on-site in the northwest section of the truck bay:
- 20 empty open-top drums;
- 5 shovels.
- 200 pounds of industrial absorbent.

An emergency generator is located on the east side of the facility. This generator is a backup source of electrical power to the facility. The primary usage of the emergency back-up generator is for lighting, scrubber operation, and safety requirements.

## **Personnel Protective Equipment**

All facility operators and potential emergency responders are issued the following personal protective equipment:

Hard hat, glove liners, heavy-duty gloves, steel toed chemical resistant boots, coveralls and full-face respirators. These PPE items are inspected by the operator each day and replaced as needed. A list of these items is maintained at Table G5-1 of this section.

## **6.0 POST EMERGENCY PROCEDURES**

Following an emergency or evacuation, the Emergency Coordinator will instruct employees to conduct a daily inspection of all areas. Section F, Procedure to Prevent Hazards, delineates all items for inspection. Only upon completion of these inspections will the facility return to normal operations.

### **6.1 Storage and Treatment of Released Materials**

Potential Flammable or Toxic Gases

Table G1-3 is a list of flammable or toxic gases with a potential of being formed from chemicals used at the facility, the method of detection, and possible methods to remedy, neutralize, capture, or control the gas. All possible combinations or gases may not be included on this list.

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## 6.2 Equipment Decontamination and Maintenance

All facility communication or alarm systems, fire protection equipment, spill control equipment, and decontamination, where required is tested and maintained as necessary to assure its proper operation in case of an actual emergency.

## 6.3 Reactivation of Activities in the affected Area

Prior to resuming normal operations, the Emergency Coordinator will ensure that all emergency equipment is inspected and returned to operating condition. See Equipment Inspection Form.

The Emergency Coordinator shall take the following precautions for the prevention of incompatible waste from being treated, stored, or located in the affected areas:

1. No new waste will be introduced into the affected area until a total cleanup is accomplished.
2. Following the spill cleanup operation, an assessment shall be made as to the proper handling of recovered materials.
  - If the exact source of the leaked or spilled material can be determined, the cleanup residue will be identified accordingly.
  - If the exact source of the leaked or spilled material cannot be determined or if two or more materials have mixed and subsequently been cleaned up, a sample will be collected and analyzed. Spill cleanup residues of listed hazardous wastes are automatically considered as the same hazardous waste.
  - Whenever two or more wastes are mixed as the result of a spill, the components will be reviewed to ensure that they are not incompatible with any material with which they might be combined.
  - Tests shall be made necessary to ensure proper handling and disposal of all material.

The Emergency Coordinator will inspect all emergency equipment listed in the Contingency Plan and certify that it is clean and fit for its intended use per the manufacturer's specification. The Equipment Inspection Form will document this inspection.

Prior to the resumption of operations in the affected area(s) of the facility, the Emergency Coordinator or designee shall contact the Nevada Division of Environmental Protection, Waste Management Division, and the EPA Regional Director and notify them of the impending resumption of operations.

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## 6.4 Personnel Debriefing

The EC, together with the assistance of the PSC - Fernley Operations, and the Environmental, Health and Safety Departments, will conduct debriefings of plant personnel and local authorities to assess the effectiveness of the preparedness and prevention measures, response activities, control, and evacuation procedures related to the incident. Based on the review, the Contingency Plan will be evaluated and updated as needed.

## 7.0 COORDINATION AGREEMENTS

Title 40 of the Code of Federal Regulations, Section 264.52 (c) requires arrangements to be agreed to by the local sheriff and fire departments, hospitals, contractors, and State and local emergency response teams. In fulfillment of the requirements of this part, the Fernley Facility has made agreements that include:

1. The North Lyon County Fire Protection District (NLCFPD);
2. The Lyon County Emergency Management Director
3. The Nevada Highway Patrol to provide support as needed during an actual emergency.
4. Renown Urgent Care, 1343 West Newlands Drive, Fernley NV to familiarize their personnel with the properties of hazardous materials and wastes handled at the facility and the types of injuries or illnesses, which could result from fire, explosions, or releases at the facility.
5. The local police department will provide traffic control and site security as needed during the emergency. Additionally, arrangements with the Lyon County Sheriff and NLCFPD have been made to familiarize their personnel with:
  1. The layout of the facility
  2. Properties and hazards associated with the materials and wastes handled at the facility.
  3. Places where facility personnel would normally be working.
  4. Entrances to the facility.
  5. Evacuation routes.

## GreeNu Commodities Emergency Response Plan

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Each of the above agencies has been contacted and sent copies of PSG Fernley's Contingency Plan. The following arrangements have been requested:

### **Lyon County Sheriff Department**

Lyon County Sheriff Department will receive a copy of the Contingency Plan, and has been asked to provide the following assistance during an emergency:

- Immediate Response
- Crowd Control Assistance
- Communications Support
- Security to the Affected Area
- Evacuation of Surrounding Areas if Required

### **North Lyon County Fire Protection District**

NLCFPD will receive a copy of the Contingency Plan and will be asked to provide:

- Primary Emergency Authority
- Immediate Response
- Primary Fire Fighting Services
- Rescue and Emergency Transport Services
- Rescue Services

### **Renown Urgent Care**

Renown Urgent Care will receive a copy of the Contingency Plan and will be asked to provide:

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- Primary Medical Services

## **Provisions for Adequate Aisle Space**

PSC Fernley has designed its facility with adequate aisle space to allow unobstructed movement of personnel, fire protection equipment and decontamination equipment to any area of the facility operation in an emergency. This has been accomplished through the provisions of aisles between all tanks and processing equipment. Main access walkways are indicated on Figure G5-1 that shows evacuation routes.

## **8.0 EVACUATION PLAN**

In the event that an incident poses an actual or serious potential threat to human health or safety, the Emergency Coordinator will evacuate the facility, or, at minimum, the affected area. If the evacuation of the outlying areas is deemed necessary, the Emergency Coordinator will advise the local Sheriff and Fire Departments (dial 911 for emergency dispatch) and the Nevada Division of Environmental Protection of the potential threat to human health.

Evacuation plan implementation requires prompt and deliberate action. The plan of action described in this section will be strictly adhered to unless, in the opinion of the on-scene Emergency Coordinator, minor modifications during an actual emergency would constitute a better evacuation.

The following policy is applicable in the event of a facility alarm condition.

1. When a gas or fire alarm sounds, all persons will evacuate through the nearest exit and proceed to the front of the plant and upwind from any smoke or fumes. Do not walk through other parts of the plant.
2. The Emergency Coordinator or designee shall account for all personnel on the plant. Everyone will assemble at a location up wind of the plant based on the direction of the windsocks and/or flags located in the front and back of the building.
3. The command area, for assessment and setting tactical priorities, will be the assembly area and the front offices. The Emergency Coordinator will utilize all resources available for data collection and risk (hazard) characterization.
4. The Emergency Coordinator will determine the people who will enter the plant to respond to the event. The individuals that are responding to the emergency are chosen from their past training, experience, skills, and knowledge of the situation. These individuals will assess the situation and gather information. This information may include the following items:

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- A. Turn over sheets and log books
- B. Tank Treatment Records
- C. Scrubbers condition and pH readings
- D. Signs of visible reactions
- E. Drager Tube readings of gasses suspected
- F. Monitor readings and conditions

5. After entry contact the Emergency Coordinator and relay information and current status alarms. The Emergency Coordinator will determine the course of action to take.
6. Notify Alarm Company that you are aware of the alarm and are working to correct conditions. The alarm company telephone number is (775) 828-9544.
7. If toxic gases are not present, the area will be rechecked, and the results given to the Emergency Coordinator, who may release the areas for re-entry.
8. Before employees return to work, all equipment used should be in proper working order and returned to their proper storage area. The Emergency Coordinator shall certify on the Equipment Inspection Form that all emergency equipment is clean and fit for its intended use per the manufacturer's specifications.
9. Alarms will be rest and the Alarm Company notified that the alarm condition has been corrected.
10. Reporting Requirements: In the event of an alarm condition results from a release of substances to the environment, the Nevada Department of Emergency Management and Lyon County Emergency Management Director must be notified within one hour of the actual release. Additionally, the Nevada Division of Environmental Protection Air, Water, and/or Hazardous Waste divisions must be notified within 24 hours. Finally, if a reportable quantity is released, the USEPA National Response Center must be notified immediately.

### **Facility Evacuation**

# GreeNu Commodities Emergency Response Plan

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The objective of an evacuation plan is to minimize the health hazards to employees or visitors from imminent or potential hazards associated with a spill or fire.

## **Alarm Signals**

The facility emergency alarms or paging system (air horn if alarms are inactive) will be used to signal partial or total facility evacuation. Verbal warning by an appointed runner may be used if necessary.

The following describes the emergency alarms' sounds and procedures associated with each (see Section 4.0 Emergency Procedures).

1. Fire Alarm - Buzzer or Bell

Immediately proceed by the evacuation route to the Assembly area. The Emergency Coordinator will provide additional instructions.

2. Gas Monitor Alarms - Siren

Immediately proceed by the evacuation route to the assembly area. Check wind direction and move up wind at least 100 feet if the assembly area is downwind. Return to work area only after permission is given by the Emergency Coordinator.

3. Medical Alert Alarm - Intermittent Whistle

Immediately proceed by the evacuation route to the assembly area. The Emergency Coordinator will check panel to determine area of alarm activation and proceed to that area with a first aid kit. Evacuated staff will perform role call to account for all personnel.

4. High Level Alarm - Beep Tone

Laboratory personnel will notify the truck bay operator of the condition and to cease pumping to the tank with the high level alarm.

The Emergency Coordinator makes his decision to evacuate based on the incident and threat to human health or the environment. In the event of a total facility evacuation and the site personnel are unable to respond to the emergency, the Lyon County Sheriff and NLCPD will be immediately notified.

## **Decision to Evacuate**

## GreeNu Commodities Emergency Response Plan

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The Emergency Coordinator will make the decision to evacuate. This decision will be based upon his experience in the field and those criteria identified in the Contingency Plan.

All personnel will immediately evacuate whenever a fire or gas alarm sounds. They will not return to their work place until cleared by the Emergency Coordinator.

### **Evacuation Procedures**

1. The on-scene Emergency Coordinator will direct the evacuation.
2. In each occurrence of an evacuation emergency, it is the responsibility of the section's leads to take charge of their personnel and property in his department.
3. Supervisors who are away from their base work area when an emergency occurs are urged to return to it as quickly as possible to take charge.
4. Operators must move their vehicles so they do not obstruct aisles. This will allow emergency vehicles to pass.
5. When the building is being evacuated, operators should shut down their operations, if possible.
6. All employees, visitors and contractors will leave the facility in an orderly manner, via exits shown in Facility Evacuation Plan in Figure G5-1 of this Plan.
7. Immediately end all telephone conversations.
8. Do not attempt to obtain personal belongings, unless otherwise authorized.
9. Do not run or make unnecessary noise.
10. During the evacuation, the Emergency Coordinator and appointed aids will ensure that all unauthorized personnel be prevented from entering the evacuated area.
11. When evacuating the building, all employees will proceed to the assembly area, as shown in the Evacuation Plan (see Figure G5-1) and muster with their department supervisor. They will remain in the assembly area as far from the building as possible so as not to interfere with

## GreeNu Commodities Emergency Response Plan

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emergency personnel and equipment. It is the responsibility of department supervisors to muster their employees in an expeditious manner and report any unaccounted for personnel to the Emergency Coordinator.

12. The Emergency Coordinator will account for all personnel to ensure that no one has been left behind.

13. The decision to re-enter the facility will be made by the Emergency Coordinator. When appropriate, the Emergency Coordinator will determine the proper protective equipment for the employees. The factors for determination of the PPE include the potential exposures and hazards from both chemical and physical materials, For each situation, the equipment and clothing will be selected to provide an adequate level of protection ,

14. The Emergency Coordinator will obtain rescue services for injured people where required.

If the emergency situation requires the evacuation of areas surrounding the facility, the Emergency Coordinator will immediately inform the Lyon County Sheriff and NLCFPD (Dial 911), the Nevada Department of Emergency Management, the Nevada Division of Environmental, and the National Response Center of such a condition. This decision will be based upon:

A. The nature and toxicity of the material involved in the emergency.

B. Prevailing wind direction.

C. Migration potential outside the facility.

D. Possibility of an explosion.

E. Possibility of a pending release of toxic vapors, gases or mists.

### **Evacuation Signal and Notification**

The signal to evacuate surrounding areas will be given directly to the Lyon County Sheriff and NLCFPD.

Under direction of the Sheriff and Fire Departments calls will be placed to facilities immediately surrounding PSC Fernley, advising them of the nature of the situation and the advisability to evacuate.

# GreeNu Commodities Emergency Response Plan

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In all cases of surrounding area evacuation, all personnel so notified will be directed as to the best roads to use and direction(s) to proceed along, as decided by the Emergency Coordinator in conjunction with the Lyon County Sheriff and the NLCFPD.

Whenever the Emergency Coordinator determines that evacuation of local areas may be advisable, he must immediately notify the NLCFPD (Dial 911) and the Lyon County Sheriff Department. He must be available to help appropriate officials decide whether local areas should be evacuated. In addition, the following agencies must be notified:

1. The Emergency Coordinator must immediately notify the Nevada Department of Emergency Management, the Nevada Division of Environmental Protection (NDEP) using the emergency spill response information in Section 3.3.1 of this Plan and provide that information.

2. The Emergency Coordinator must also immediately notify the National Response Center. The report must include:

- Name and telephone number of reporter;
- Name and address of facility;
- Time and Type of incident (e.g., release, fire);
- Name and quantity of material(s) involved;
- The extent of any injuries;
- The possible hazards to human health, or the environment, outside the facility.

## **9.0 INCIDENT REPORTS**

The Comprehensive Environmental Response, Compensation, and Liability Act's Superfund Amendments and Reauthorization Act of 1986, Title III, Section 304 requires immediate local notification when an accidental or unplanned release of a hazardous substance occurs. IN addition to local emergency responders, notification will also be provided immediately to the following agencies.

- Lyon County Department of Emergency Management
- Nevada Department of Emergency Management
- Nevada Division of Environmental Protection

# GreeNu Commodities Emergency Response Plan

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- EPA National Response Center

The information required includes: identification of the substance; location of the release; time the release started; duration; estimate of the quantity of the substance released into the environment; medium of the environment receiving the release (soil, water, air, pavement, etc.); known or anticipated acute or chronic health risks associated with the release; when appropriate, advice regarding medical attention for treatment of exposed individuals; precautions to be taken , including evacuation and other considerations: and name and telephone number of contact for further information.

## 10.0 AMENDMENTS TO THE CONTINGENCY PLAN

Periodically, PSC Fernley's Contingency Plan and Emergency Procedures Plan will be reviewed and updated as necessary. The plan will be immediately amended whenever:

1. The plan fails in an emergency.
2. The facility makes changes in its design, construction, operation, maintenance, or security system or other circumstances which would increase the potential for fires, explosions, or releases of hazardous waste constituents or which may affect emergency response procedures.
3. There are changes in the amount or type of emergency equipment.
4. There are changes in Emergency Coordinators
5. The facility permit is revised.

If changes are made in the Contingency Plan and Emergency Procedures Plan, updated copies showing these changes will be distributed to local authorities and the Nevada Division of Environmental Protection.

This table will be filled in when specific waste materials are identified as being on the premises:

Waste Type	Hazards	EPA Waste Code(s)
Ignitable	Flash Point of less than 140F or ignitable compressed gas or is an oxidizer	
Corrosive	pH < 2 or > 12.5	
Reactive	Reactive-possible water reactive or Cyanide or	

## GreeNu Commodities Emergency Response Plan

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	Sulfide waste that is capable of releasing toxic gasses	
Toxic	Toxicity	
Waste From Non-Specific Sources	Potentially Toxic/Reactive/Acutely Hazardous	
Waste From Specific Sources	Corrosive/Toxic	
Acutely Hazardous Commercial Waste Products	Toxic	
Toxic Commercial Chemical Products	Toxic	

# **ATTACHMENT 6**

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## **TCC Detailed Calculations**

## Total Closure Cost Summary - Proposed GreeNu Facility<sup>1</sup>

<b>Transportation Costs</b>	<b>Cost</b>
Tires Bales	\$163,200.00
Carbon Black	\$14,500.00
Fuel (Pyro Oil)	\$5,800.00
<b>Subtotal</b>	<b>\$183,500.00</b>
<b>Destination Disposal Charges</b>	
Tires Bales	\$628,032.00
Carbon Black	\$3,124.17
Fuel (Pyro Oil)	\$100,000.00
<b>Subtotal</b>	<b>\$731,156.17</b>
<b>Loading Charges</b>	
Tires Bales	\$20,000.00
Carbon Black	\$0.00
Fuel (Pyro Oil)	\$0.00
<b>Subtotal</b>	<b>\$20,000.00</b>
<b>250 Gallon Propane Tank Removal</b>	<b>\$20,000.00</b>
<b>Administrative Costs</b>	<b>\$25,000.00</b>
<b>Security Costs</b>	<b>\$33,075.00</b>
<b>Total</b>	<b>\$1,012,731.17</b>
<b>Total Closure Cost Estimate<sup>2</sup></b>	<b>\$1,215,277.40</b>

<sup>1</sup>See attached document for a detailed explanation of closure costs.

<sup>2</sup>20% buffer added per guidelines

May 29, 2014

State of Nevada  
Department of Conservation & Natural Resources  
Re: Updated Waste Tire Management Facility – Total Closure Costs (TCC)

To Whom It May Concern:

The following provides for an explanation of the Total Closure Cost (TCC) estimate for the obtainment of the waste tire management facility permit and the necessary financial assurance mechanism; as per Nevada Division of Environmental Protection (NDEP) Solid Waste Branch Guidelines:

Total Closure Cost Estimate (TCC) = 1.2 (Transportation Cost + Destination Charge + Loading Cost + Administration Cost + Security Cost)

**TCC For GreeNu Facility = \$1,215,277.40**

Transportation Cost:

The GreeNu facility will have four (5) products that may need to be hauled away should the facility close: Tire Bales, Carbon Black, Liquid Fuel, Scrap Steel, and a 250 gallon propane tank. As discussed in the permit application the scrap steel will be removed by the steel recyclers providing the open-top roll-off containers as they own the container.

Transportation for: Tire Bales & Carbon Black

Facilitated by: Western Nevada Transport (WNT)

Contact: Paul Gianoli

*Reference: See attached Quote from WNT*

Cost Figures: \$17.00/Ton Tire Bales  
9,600 Tons of Tire Bale Material

\$25.00/Ton Haul Carbon Black  
580 Tons of Carbon Black Material

Destination: Lockwood Landfill  
34.9 Miles or 69.8 Miles Roundtrip

Costs: Tire Bale Transportation Cost: \$163,200.00

Carbon Black Transportation Cost: \$14,500.00

Transportation for: Fuel

Facilitated by: Best Environmental

Contact: Marty

*Reference: See attached Quote from Best Environmental*

Cost Figures: \$200.00/Load  
29 Loads

Destination: Best Environmental – Silver Springs, NV

Costs: Pump/Transport: \$5,800.00

**\$183,500 Total Transportation Cost**

Destination/Disposal Charge for: Tire Bales & Carbon Black

Facilitated by: Lockwood Landfill – Waste Management

Contact: Chris Anderson – District Manager

*Reference: See attached quote from Lockwood Landfill*

Costs: \$35.75/Cubic Yard  
Bale = 1.83 Cubic Yard = \$65.2/Bale @ ea.  
9,600 Bales Total  
9,600 x \$65.42/Bale  
Destination Charge \$628,032.00

Costs: \$19.95/Cubic Yard  
0.27 Tons = 1 Cubic Yard  
580 Tons = 156.6 Cubic Yards  
156.6 x \$19.95/Bale  
Destination Charge \$3,124.17

Destination/Disposal Charge for: Fuel

Facilitated by: Best Environmental

Contact: Marty

*Reference: See attached Quote from Best Environmental*

Cost Figures: \$0.50/Gal  
200,000 Gal

Destination: Best Environmental – Silver Springs, NV  
Costs: Recycle/Blending: \$100,000.00

**\$731,156 Total Destination Cost**

Loading Cost:

Potential loading costs for the GreeNu facility include: Loading Tire Bales on tipper trucks, loading carbon black from storage tanks to hopper-dump truck, and Loading Fuel from tank(s) to fuel truck.

Loading for: Tire Bales

Facilitated by: Western Nevada Transport (WNT)  
Contact: Paul Gianoli  
*Reference: See attached quote from WNT*

Cost Figures: \$1000/Day – Forklift and operator  
8 Hr. Day = 8.7 Loads/Day/Truck  
3 Trucks Hauling = 26.1 Loads/Day  
400 Total Loads/26.1 Loads/Day = 15.3 Days

Costs: 20 Loading Days  
\$1000/Day – Forklift and operator  
Tire Bale Loading Cost \$20,000.00

Loading for: Carbon Black

Facilitated by: Western Nevada Transport (WNT)  
Contact: Paul Gianoli  
*Reference: See attached quote from WNT*

Truck will automatically be loaded by equipment on site

Carbon Black Loading Cost \$0.00

Loading for: Fuel

Facilitated by: Best Environmental  
Contact: Marty  
*Reference: See attached Quote from Best Environmental*

Cost Figures: Included in Disposal Cost

Destination: Best Environmental – Silver Springs, NV

Fuel Loading Cost \$0.00

**\$20,000.00 Total Loading Cost**

Administrative Cost:

Facilitated by: McGinley & Associates

Contact: Tony Dimpel

*Reference: See attached quote from McGinley & Associates*

Costs: \$25,000.00

Total Administrative Cost \$25,000.00

**\$25,000.00 Total Administrative Cost**

Security Cost:

Facilitated by: ESI Security Services

Contact: Mike Hendi

*Reference: See attached quote from ESI Security Services*

Costs: \$735/per 24 hour day

Costs: Max Number of Day Security Should be Required = 45  
Security Costs \$33,075

Removal of 250 gallon propane tank:

Cost: \$20,000\*

\*No cost estimate was obtained for the removal of the 250 gallon propane tank. It was very conservatively assumed that \$20,000 will provide more than enough funds to facilitate the removal of the propane tank.

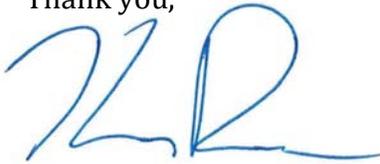
OVERVIEW:

Total Closure Cost Estimate (TCC) = 1.2 (Transportation Cost + Destination Charge + Loading Cost + Administration Cost + Security Cost + Propane Tank Removal)

**\$1,215,277.40 = 1.2 (\$183,500 + \$731,156 + \$20,000 + \$25,000 + \$33,075 + \$20,000)**

Please reference the following attachments for verification of each aspect of the TCC in regards to the GreeNu Commodities Project.

Thank you,



Kevin Rose - Director



DATE: 2/11/2014

**GWCEC**

601 Pennsylvania Avenue NW  
 Suite 900 S Building  
 Washington, D.C. 20004

CONTACT:

**ATTN: KEVIN ROSE**

P: 253.307.4339

F: 703.563.6030

email: krose@gwecc.com

JOB NAME:

**HAUL TIRE BALES FROM GreeNu SITE (WNRP) TO LOCKWOOD LANDFILL**

QUOTE:

TIRE BALES	9600 TONS	\$17.00/TON	\$163,200.00
LOAD TIRE BALES	\$1000.00/Day	20 DAYS	\$20,000.00
HAUL CARBON BLACK	580 TONS	\$25.00/TON	\$14,500.00
<b>TOTAL</b>			<b>\$ 197,700.00</b>

**CONDITIONS:**

- 1.) Loading Carbon Black is GreeNu's responsibility.
- 2.) Unloading of Tire Bales & Carbon Black is the responsibility of others.
- 3.) STANDBY: \$80.00 Per Hour After:
  - One (1) Hour to Unload.
- 4.) Payment Terms: Net 30 Days.
- 5.) RETURN LOAD: 50% of quoted rate.
- 6.) MINIMUM LOAD: 24 Tons (Semi).

QUOTED BY:

*Paul R. Gianoli*  
 Paul R. Gianoli

WESTERN NEVADA TRANSPORT, LLC.

*02/11/2014*  
 DATE

ACCEPTED BY: \_\_\_\_\_

DATE

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**From:** Kevin Anderson [mailto:[kanderson@h2oenvironmental.net](mailto:kanderson@h2oenvironmental.net)]

**Sent:** Wed 2/12/2014 9:26 AM

**To:** Larry Appel

**Cc:** [martyf@bstenvironmental.com](mailto:martyf@bstenvironmental.com)

**Subject:** RE: Estimate

Hi Larry,

I spoke to Marty (775-577-9001) @ Best Environmental in Silver Springs NV and he stated they would be able to pump, transport and recycle/blend this product.

29 loads @ \$200/load = \$5800.00

Recycle/blending @ \$0.50/gallon x 200,000 gallons = \$100,000

**Total would be \$105,800.00**

Marty did have a few questions on the product if you would not mind him contacting you.

Once you folks are up and running, please keep us in mind for any industrial cleanings, confined space entry cleanings, any and all waste management and 24-hour emergency response. You can find out more about us @ [h2oenvironmental.org](http://h2oenvironmental.org)

Thanks and have a great day!

Kevin Anderson

H2O Environmental, Inc

Reno General Manager

Ph: 775-351-2237

Fax: 775-351-2219

[kanderson@h2oenvironmental.net](mailto:kanderson@h2oenvironmental.net)

Nevada License - 0052215

California License - 809096

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**From:** Larry Appel [<mailto:Larry@advancedteksystems.com>]

**Sent:** Monday, February 10, 2014 4:25 PM

**To:** [kanderson@h2oenvironmental.net](mailto:kanderson@h2oenvironmental.net)

**Subject:** Estimate

Hello Kevin,

Good talking to you.

As discussed, I'm looking for an estimate to satisfy the NDEP Financial Assurance Calculation for the NDEP Waste Tire Management Facility permit. One of the products we would need to dispose of in the event of a plant shutdown is pyrolysis derived oil, essentially the equivalent of diesel #4.

I've attached the MSDS sheet as well as a pyrolysis oil and gas analysis. The pyro gas will not be a problem but at max capacity, we would need to dispose of 200,000 gals of pyro oil stored in underground tanks.

Judging from the conversations with the NDEP, they will want to know the method and location of disposal as well as the transportation costs.

Please call with any questions.

Thanks!

***Larry Appel***

***Chief Executive Officer***

***Advanced Tek Systems***

(253) 219-9507 Cell

[Larry@AdvancedTekSystems.com](mailto:Larry@AdvancedTekSystems.com)

[www.AdvancedTekSystems.com](http://www.AdvancedTekSystems.com)

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 **SOQ updated August 2013.pdf**  
2112K



environmental

**24 HR. HAZMAT EMERGENCY RESPONSE TEAM**

# STATEMENT OF QUALIFICATIONS



**Serving the Western United States from Offices in:  
Boise ♦ Las Vegas ♦ Reno ♦ Phoenix**

**866/H2O-SPILL  
[www.h2oenvironmental.org](http://www.h2oenvironmental.org)**

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6679 S. Supply Way, Boise, ID 83716  
phone: 208.343.7867 fax: 208.322.2670  
[www.h2oenvironmental.org](http://www.h2oenvironmental.org)



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

## **INTRODUCTION**

H2O Environmental, Inc. was started in 1996 by John Bradley, the company's Chief Executive Officer. John saw a growing need for a statewide environmental company to service Nevada. In 1996, the company's first office was opened in Las Vegas and quickly gained recognition as a qualified and diverse environmental company. A second office was opened in Reno in 1999. The company opened its third office in Boise, Idaho in 2007 which now also serves as its corporate headquarters. In 2009, a fourth office was opened in Chandler, Arizona.

With these strategically selected office locations, the company is able to effectively and efficiently serve its clients throughout the Western United States.

H2O operates and maintains a large fleet of specialized equipment including the following: air movers, vacuum tankers, vacuum trucks, environmental roll-off bins, end dumps/side dumps, excavation equipment, confined-space entry gear, and traffic control and drum handling equipment.

The company is also an oil spill response organization (OSRO) capable of containing and removing oil releases into inland waterways.

## **MISSION STATEMENT**

H2O Environmental, Inc. is a full-service hazardous waste remediation, transport, disposal and emergency spill response company. We provide customized service by sharing client objectives while giving constant attention to cost effective solutions. We make a situation more manageable by simplifying complex physical and regulatory conditions.

Our experience enables us to analyze a situation and outline steps that achieve environmentally conscious results. We effectively interact with regulatory agencies to facilitate acceptance of sound solutions. We adhere to strict health and safety standards for the welfare of all concerned. Our sworn commitment is to protect the environment.



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**SERVICE LINES**

**Transportation**

Vacuum Truck Service (DOT specification & full-opening rear door, all sizes)  
Vactor Air Movers (liquid, sludge & dry powder material removal)  
Roll-off Bin Service (various sizes for hazardous waste)  
Dump Trucks (heavy duty demolition beds)  
Double Bottom Dumps  
Double Side Dumps  
Heavy Haul  
Box Van Transportation

**Remediation**

Mold Sampling and Removal  
Illegal Clandestine Drug Lab Removal  
Crime Scene, Suicide, Natural Death Removal  
Infectious Disease and Chemical Decontamination  
Treatment of Petroleum Contaminated Soils and Wastewater  
Marijuana Grow Removal

**Excavation**

Contaminated Soil Excavation (industrial and hazardous)  
Underground and Above Ground Storage Tank Removal  
Vapor Extraction System Installation  
Septic Tank and Leach Field Installation  
Sand/Oil Separator and Grease Trap Installation

**Waste Management**

Manifesting, Packaging, Transportation and Disposal of Hazardous Waste  
Industrial and Hazardous Liquid Waste Hauling  
Sand/Oil Separator and Grease Trap Pumping  
Conditionally Exempt Small Quantity Generator Waste Programs (CESQG)  
Chemotherapy and Infectious Wastes  
Unknown Waste Identification  
Drum Disposal (landfill or incineration)  
Certified Environmental Manager Services  
Radioactive Management and Disposal Services



*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**Industrial Cleaning**

Storm Drain & Culvert Hydro-jetting  
Sewer Cleaning & Video Inspection  
Tank Cleaning (above and underground)  
Lift Stations  
Confined-Space Entry Teams

**24 Hr. Hazmat Spill Response**

Oil Spill removal from Rivers, Lakes and other waterways (OSRO)  
Oil, Chemical, Biological Spill Response (Level-A)  
Shifted and Leaking Semi-Trailer Loads  
Fuel Truck Fires



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**EQUIPMENT INVENTORY**

All equipment is strategically disbursed between all offices

**Pumping & Cleaning**

- 5 - Stainless Steel Vacuum Tankers (6,000 gallon, DOT-407/412)
- 3 - Vacuum Tankers (5,000 gallon, self-contained pump, DOT-407/412)
- 2 - Vacuum Skid (3,000 gallon, full-opening rear door, DOT-407/412)
  - 1 - Tanker Trailer (3,000 gallon)
- 5 - Vactor Air Movers (2,500 gallon with hydro-jetters)
- 3 - GapVax Wet/Dry Industrial Vacuum Truck (3,000 gallon, 28" vacuum)
- 3 - Vacuum Trucks (3,000 gal. to 6,000 gal. capacity and full opening rear door)
  - 1 - Portable TPH Vapor Extraction Unit (trailer mounted)
  - 1 - Hydro Jetter (jets storm drain/sewer line)
- 6 - Steam Cleaners (3,000 psi./3 gpm, trailer mounted with 300 gallon water tank)
  - 1 - 4"Centrifugal High Volume Liquid Pumps (trailer mounted)
  - Video Pipeline Inspection Camera & Line Locator
  - 1 - 24,000 psi Hydro Blaster

**Excavation**

- 1 - Cat 330 Excavator (with thumb)
  - 1 - Cat 322 Excavator
  - 3 - Cat 320 Excavators
  - 3 - Cat 315 Excavator
  - 1 - Cat 307 Excavator
  - 1 - ZX 200 Hitachi Excavator
- 1 - Cat 312 Excavator (with hydraulic breaker attachment)
  - 1 - Cat Mini-Excavator
  - 2 - Cat Backhoe (4WD, enclosed cab)
  - 2 - Case 580M Backhoe (4WD, enclosed cab)
  - 1 - Cat Track Loader (enclosed cab)
    - 1 - Cat 938 Loader
    - 1 - Cat 939 Loader
  - 2 - Cat Skid Steer Loader (with hydraulic drum turner)
- 3 - 95XT Case Skid Steer Loader (with hydraulic drum turner)
  - 8- Side Dump Trailers (20-ton)
  - 9 - 10 Wheel Dump Trucks
- 1 - Heavy Duty Dump Truck & Trailer (30-ton capacity)
  - Air Compressor, Concrete Saw, 5K Generator
  - 1 - Volvo A25C Articulated Off Road Dump Truck
  - 1 - Cat D250 Articulated Off Road Dump Truck
  - 3 - Trailboss Tilt Deck Equipment Trailers
  - 1 - 50,000 lb. Equipment Transport Trailer
  - 2 - 15,000 lb. Equipment Transport Trailers



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**Roll-Off, Transportation & Spill Response**

- 12 - Semi Tractors (3-axle with hydraulic kits)
- 5 - 48' Semi-Van Trailer (with lift gate)
- 5 - 10 wheel Roll-Off Truck
- 4 - Roll-Off Trailers (53' Rocket Launcher)
- 60 - Roll-Off Bins (18 thru 30-yard capacity)
- 5 - Emergency Response Vehicles (fully stocked)
- 2 - Hazardous Materials Response Units (with generators and compressors)
- 8 - 5 Ton Gear Trucks (fully stocked)
- 1 - 32' Command Center
- 3 - Emergency Response Trailers (fully stocked with exterior lighting)
- 5 - John Boats with Outboard Motors

**Other Specialized Equipment**

- 100,000 Gallons of Storage Tank Capacity
- 15 - Portable Storage Tanks (500 thru 5,000 gallon)
- 2 - Carbon Vessels (1 cu. yard, treats liquid or air emissions)
- 6,000-Linear Feet of 18-inch Containment Boom (petroleum spills on water)
- 1 - 12' Rock Screen (Grizzly)
- Highway Traffic Control Equipment (arrow boards, cones, traffic signs)
- 1 - Highway Attenuator Crash Box
- 14 - HEPA Negative Air Machines
- 8 - HEPA Vacuums
- 5 - Mercury Vacuums
- 3 - Satellite Phones
- 6 - Air Monitors (LEL, O2, CO, H2S)
- Ohio Lumex RA915 Light - Mercury Vapor Analyzer
- Confined-Space Gear, SCBA's and Level A Suits



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**OFFICE LOCATIONS & CONTACTS**

**Boise**

6679 S. Supply Way  
Boise, ID 83716  
(208) 343-7867 office  
(208) 322-2670 fax

Contact: Joe Wickenden (General Manager)

**Las Vegas**

4435 E. Colton Ave, Suite 101  
Las Vegas, NV 89115  
(702) 396-4148 office  
(702) 643-8635 fax

Contact: Perry Pearson (General Manager)

**Reno**

3510 Barron Way, Suite 200  
Reno, NV 89511  
(775) 351-2237 office  
(775) 351-2219 fax

Contact: Greg Scyphers (General Manager)

**Arizona**

2364 South Airport Blvd. – Suite 2  
Chandler, AZ 85249  
(602) 258-3388 office  
(602) 258-3266 fax

Contact: Kris Ahrens (General Manager)

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6679 S. Supply Way, Boise, ID 83716  
phone: 208.343.7867 fax: 208.322.2670  
[www.h2oenvironmental.org](http://www.h2oenvironmental.org)



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

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**DISPOSAL SITES**

**Landfills**

**US Ecology - Nevada**

12 Miles South of Beatty  
Beatty, NV 89002  
(800) 239-3943  
NVT330010000

**US Ecology – Idaho**

20400 Lemley Rd.  
Grand View, ID 83624  
(208) 834-2275

**Idaho Waste Systems**

16415 NW Waste Site Drive  
Mayfield, Idaho 83716  
(208) 796-2727

**Waste Management – Lockwood**

2401 Canyon Way  
Sparks, NV 89434  
(775) 342-0401

**Waste Management – Butterfield**

40404 S. 99<sup>th</sup> Ave.  
Mobile, AZ 85239  
(602) 437-3165

**Forward Landfill**

9999 South Austin Road  
Manteca, CA 95336  
(209) 982-4298  
CAL000190080

**Allied Waste**

La Paz County  
Parker, Arizona 85344  
(928) 916-1253  
AZC950823111

**State Certified Analytical**

**Great Basin Laboratories**

855 Mill Street #2B  
Reno, NV 89502  
(775) 323-4822

**Veritas Laboratories**

8409 Desert Quail Drive  
Las Vegas, NV 89128  
(702) 521-1462

**TSDF'S and Organic Treatment**

**DeMenno/Kerdoon**

2000 N. Alameda Street  
Compton, CA 90222  
(310) 537-7100  
CAT080013352

**Incineration, Recycle, and Treatment**

**Veolia ES Technical Solutions LLC**

1704 First Street  
Azusa, CA 91702  
(626) 334-5117  
CAD008302903

**Light Tubes and Mercury**

**Veolia Environmental Services**

5736 W. Jefferson Street  
Phoenix, AZ 85043  
(602) 233-2955  
AZ00003373760

**Bio-Hazardous**

**Disposal Services**

Reno, NV  
(775) 329-8822

**Used Oil Recycling**

**Reno Drain Oil Environmental Services (RDO)**

11970 I-80 East  
Sparks, NV 89434  
(775) 342-0351

**Nevada Thermal Services, LLC**

2600 E. Mustang Rd.  
Sparks, NV 89434  
(775) 342-0607

**SRC Oil & Fuel, LLC**

1850 W. Broadway Rd. Ste. 116  
Phoenix, AZ 85041  
(602) 268-2600



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**COVERAGE AREAS & RESPONSE TIMES**

**Coverage Areas**

**Boise**

- Idaho
- Washington
- Oregon
- Montana
- Wyoming
- Northern Utah
- Northern Nevada

**Las Vegas**

- Nevada
- Southern Utah
- Southern California
- Northern Arizona

**Reno**

- Nevada
- Northern California
- Southern Oregon
- Southern Idaho

**Phoenix**

- Arizona
- Southern Nevada
- New Mexico
- Colorado
- Texas

**Response Times**

Due to the strategic location of our offices, we are able to quickly and efficiently respond to calls anywhere throughout the Western United States. Response times vary depending on the location and magnitude of the incident and what equipment would be required, however, our response teams are able to reach most locations within 4 hours or less. We are able to reach even the most remote locations within 12 hours.



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**SPILL RESPONSE CAPABILITIES**

- U.S. Coast Guard Oil Spill Response Organization rated for petroleum spills on swift water rivers and lakes.
- Petroleum fuels and DOT hazardous material chemical releases.
- Bulk releases or tanker roll-overs involving toxics, flammables and corrosives.
- Shifted loads, leaking drums, ruptured diesel fuel tanks and major truck crashes from highway carriers.
- Crime scene, illegal drug lab and infectious/biological substance removal.
- Mercury decontamination of residential and commercial sites.



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**LICENSES & PERMITS**

**U.S. EPA Identification No.**

Las Vegas – NVR000086496  
Reno – NVR000084541  
Arizona – AZR000508119

**U.S. DOT Identification No.**

052103 703 001LN (HAZMAT)  
774135 (US DOT)

**Highway Patrol No.**

Arizona - HMTL-14288  
California - CA-203158  
California - DTSC-4229  
Nevada - UPM-774135-NV

**Idaho Contractors License No.: RCE-22451**

General License

**Nevada Contractors License No.: 0052215**

General A22-Hazardous Waste  
12-Excavation, Grading, Trenching  
13-Wrecking Buildings  
15-Sewers, Drains, Pipes

**Arizona Contractors License Number: ROC220874**

General License

**California Contractors License No.: 809096**

General-A Engineering  
Hazardous Substance Removal

**Oregon Contractors License No.: 185653**

Residential Specialty Contractor  
Commercial Specialty Contractor – Level 1

**Utah Contractors License No.: 8196240-5501**

Contractor with LRF – S310



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**Federal Tax ID #**

88-0370785

**Dunn & Bradstreet #**

02-651-5283

**NAICS Code**

562910

**CAGE Code**

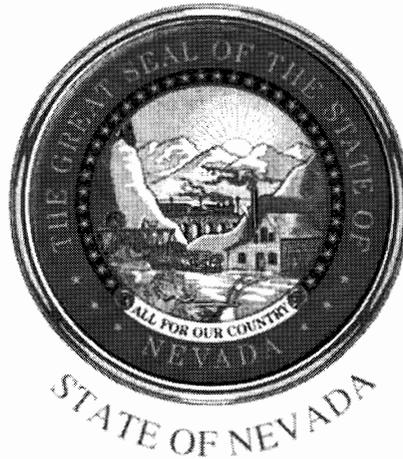
1Q9R1

**Insurance Coverage**

Commercial General	\$2,000,000
Automobile	\$1,000,000
Pollution Control	\$5,000,000
Umbrella	\$10,000,000
Workers Compensation	\$1,000,000



SECRETARY OF STATE



## NEVADA STATE BUSINESS LICENSE

**H2O ENVIRONMENTAL, INC.**  
Nevada Business Identification # NV19961214703

**Expiration Date: October 31, 2013**

In accordance with Title 7 of Nevada Revised Statutes, pursuant to proper application duly filed and payment of appropriate prescribed fees, the above named is hereby granted a Nevada State Business License for business activities conducted within the State of Nevada.

This license shall be considered valid until the expiration date listed above unless suspended or revoked in accordance with Title 7 of Nevada Revised Statutes.

IN WITNESS WHEREOF, I have hereunto  
set my hand and affixed the Great Seal of State,  
at my office on October 30, 2012



A handwritten signature in black ink, appearing to read "Ross Miller".

ROSS MILLER  
Secretary of State

This document is not transferable and is not issued in lieu of any locally-required business license, permit or registration.

*Please Post in a Conspicuous Location*

**You may verify this Nevada State Business License  
online at [www.nvsos.gov](http://www.nvsos.gov) under the Nevada Business Search.**

Bureau of Occupational Licenses  
Department of Self Governing Agencies  
The person named has met the requirements for registration and is  
entitled under the laws and rules of the State of Idaho to operate as a(n)

**REGISTERED ENTITY CONTRACTOR**

H2O ENVIRONMENTAL  
JOHN BRADLEY III  
6679 SOUTH SUPPLY WAY  
BOISE ID 83716

*Tana Cory*  
Tana Cory  
Chief, B.O.L.

RCE-22451  
Number

06/28/2014  
Expires

H2O ENVIRONMENTAL  
JOHN BRADLEY III  
6679 SOUTH SUPPLY WAY  
BOISE ID 83716

Your registration  
must be shown on  
demand.



carry this copy

display this copy



06/13/2013

Bureau of Occupational Licenses  
Department of Self Governing Agencies  
The person named has met the requirements for registration and is  
entitled under the laws and rules of the State of Idaho to operate as a(n)

**REGISTERED ENTITY CONTRACTOR**

H2O ENVIRONMENTAL  
JOHN BRADLEY III  
6679 SOUTH SUPPLY WAY  
BOISE ID 83716

*Tana Cory*  
Tana Cory  
Chief, B.O.L.

RCE-22451  
Number

06/28/2014  
Expires

Southern Nevada Office  
2310 Corporate Circle, Suite 200  
Henderson, Nevada 89074  
(702) 486-1100

Northern Nevada Office  
9670 Gateway Drive, Suite 100  
Reno, Nevada 89521  
(775) 688-1141

# STATE CONTRACTORS BOARD

The Nevada State Contractors Board certifies that

## H 2 O ENVIRONMENTAL INC

Licensed since August 01, 2001

License No. 0052215

Is duly licensed as a contractor in the following classification(s):

**PRINCIPALS:**

PATRICK THOMAS HEYNEMAN, President  
JOHN WILFRED BRADLEY, CEO Qualified

**A12-EXCAVATING GRADING TRENCHING &  
SURFACING; A13-WRECKING BUILDINGS; A15-SEWERS,  
DRAINS & PIPES; A22-UNCLASSIFIED; A22 IS  
DESIGNATED FOR HAZARDOUS WASTE REMOVAL  
ONLY**

LIMIT: \$350,000  
EXPIRES: 08/31/2014



Chairman, Nevada State Contractors Board



### STATE OF NEVADA CONTRACTORS LICENSE

THIS IS TO CERTIFY THAT THE COMPANY  
LISTED BELOW IS LICENSED IN THE STATE OF  
NEVADA FOR THE CLASSIFICATION(S) SHOWN:

H 2 O ENVIRONMENTAL INC  
6679 SOUTH SUPPLY WAY  
BOISE ID 83716

LIC. NO.  
0052215

EXPIRES:  
08/31/2014

LIMIT: \$350,000

Class: A12, A13, A15, A22 A22 IS DESIGNATED  
FOR HAZARDOUS WASTE REMOVAL ONLY

### STATE OF NEVADA STATE CONTRACTORS BOARD

9670 Gateway Drive, Suite 100 Reno, Nevada 89521  
2310 Corporate Circle, Suite 200 Henderson, Nevada 89074

#### POCKET CARD RE-ORDER FORM

Enclosed is \$ \_\_\_\_\_ to cover the cost of \_\_\_\_\_ additional  
pocket cards at ten dollars (\$10.00) each.

Firm Name \_\_\_\_\_

License No. \_\_\_\_\_

Date: \_\_\_\_\_ By: \_\_\_\_\_

H 2 O ENVIRONMENTAL INC  
6679 SOUTH SUPPLY WAY  
BOISE ID 83716

# STATE OF ARIZONA

License No. ROC 220874

## Office of the Registrar of Contractors

*This is to certify that:*

H 2 O Environmental Inc

*Having been shown to possess all the necessary qualifications, and having complied with all the requirements of the law,  
is by order of the Registrar of Contractors duly licensed and admitted to engage in and pursue the business of*

K-5 RESIDENTIAL AND COMMERCIAL HAZARDOUS WASTE AND SOIL REMEDIATION

*Contractor in the State of Arizona. Given my hand and the seal of the Registrar of Contractors in my office, City of  
Phoenix, on 06/05/2006*



*William A. Mundell*

DIRECTOR, ARIZONA REGISTRAR OF CONTRACTORS



State Of California  
**CONTRACTORS STATE LICENSE BOARD**  
ACTIVE LICENSE



License Number **809096**

Entity **CORP**

Business Name **H 2 O ENVIRONMENTAL INC**

Classification(s) **A HAZ**

Expiration Date **06/30/2014**

[www.cslb.ca.gov](http://www.cslb.ca.gov)



**STATE OF OREGON  
CONSTRUCTION CONTRACTORS BOARD  
LICENSE CERTIFICATE**

**LICENSE NUMBER: 185653**

This document certifies that:

**H2O ENVIRONMENTAL INC  
6679 S SUPPLY WAY  
BOISE ID 83716**

is licensed in accordance with Oregon Law as a Residential Specialty Contractor and a Commercial Specialty Contractor Level 1.

**License Details:**

**EXPIRATION DATE: 04/07/2015**

**ENTITY TYPE: Corporation**

**INDEP. CONT. STATUS: NONEXEMPT**

**RESIDENTIAL BOND: \$15,000**

**COMMERCIAL BOND: \$50,000**

**INSURANCE: \$1,000,000 / \$2,000,000**

**RMI: JOHN W BRADLEY**

**HOME INSPECTOR CERTIFIED: NO**





**WASTE MANAGEMENT**

Lockwood Regional Landfill  
2401 Canyon Way  
Sparks, NV 89434  
(775) 342-0401  
(775) 342-2328 - Fax

February 18, 2014

Mr. William Rose  
GreenNu Commodities, LLC  
11000 US Hwy 50  
Hazen, NV 89408

Dear Mr. Rose:

Thanks you for your interest in pricing for the Lockwood Regional Landfill.

Based on your February 10, 2014 inquiry, Lockwood Landfill is currently permitted to accept the waste material that you identified.

Baled whole tires would be charged at the current gate rate for baled waste, which is \$35.75 per cubic yard, plus applicable fuel, environmental and RCR charges. Based on the description and analytical provided for "Carbon Black" industrial waste, the rate is \$19.95 per cubic yard plus profiling fee, fuel, environmental, RCR and other fees that may be associated with special handling requirements, as necessary.

Please keep in mind that the rates quoted herein are valid at the present time and are subject to annual price increases.

Please call me anytime at 775-343-7372 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Anderson'.

**Chris Anderson**  
District Manager

Lockwood Regional Landfill  
2401 Canyon Way  
Sparks, NV 89434

775-343-7372  
[cander14@wm.com](mailto:cander14@wm.com)



**Reno Office**  
815 Maestro Drive  
Reno, NV 89511

ph: 775.829.2245  
fax: 775.829.2213  
www.mcgin.com

**Las Vegas Office**  
6280 So. Valley View Blvd  
Suite 604  
Las Vegas, NV 89118

ph: 702.260.4961  
fax: 702.260.4968

May 29, 2014  
Revised Cost Estimate

GreeNu Commodities, LLC  
Attn: Larry Appel  
1050 South 21<sup>st</sup> Street  
Sparks, NV

**ATTN:** Larry Appel

**VIA EMAIL:** [Larry@AdvancedTekSystems.com](mailto:Larry@AdvancedTekSystems.com)

**RE: COST ESTIMATE TO COORDINATE AND OVERSEE DISPOSAL OF TIRES AND TIRE DERIVED MATERIALS, GREENU COMMODITIES LLC, 11000 US ALT HWY 50, FERNLEY, NV 89408**

Mr. Appel:

McGinley & Associates, Inc. (MGA) is pleased to submit this cost estimate to coordinate and oversee the disposal of all tires and tire derived materials that will be stored at GreeNu Commodities' proposed "tire to fuel" facility to be located near Fernley, Nevada. The location of the site is indicated in Figure 1.

## 1. SCOPE OF SERVICES

The scope of services in this cost estimate includes coordinating and overseeing the proper disposal of the following materials:

- Approximately 9,600 tons of tires (960,000 passenger tire equivalents) which will be stored in an outdoor yard in baled form.
- 470,000 cubic feet of carbon black which will be stored in two outdoor storage silos.
- 200,000 gallons of a tire derived fuel referred to as "pyro oil" which is similar diesel fuel in composition. The pyro oil will be stored in five underground storage tanks.
- Approximately 40 cubic yards of scrap steel which will be stored in a dumpster.
- A 250 gallon propane tank

Also included in this cost estimate is the coordination 24-hour onsite security of the subject facility for the duration of the disposal activities.

## 2. COST ESTIMATE

The estimated cost to perform the services outlined is \$25,000.

### 3. CLOSING

Should you have any questions regarding this cost estimate please contact me at (775) 829-2245.

Respectfully submitted,

**McGinley and Associates, Inc.**

A handwritten signature in blue ink, appearing to read 'Anthony Dimpel', is written over a light blue circular stamp. The signature is fluid and cursive.

Anthony Dimpel, E.I., C.E.M # 2353, Exp. 3/20/2015  
Project Manager

**McGINLEY & ASSOCIATES, INC.**  
**TERMS FOR PROFESSIONAL SERVICES**  
**PAGE 1**

**THE AGREEMENT:** Together, the McGinley & Associates Inc. (MGA) proposal dated May 29, 2014 and the elements herein will constitute the entire AGREEMENT, superseding any and all prior negotiations, correspondence, or agreements whether written or oral. Any changes to this AGREEMENT must be mutually agreed to in writing.

**STANDARD OF CARE:** CLIENT recognizes that subsurface conditions may vary from those observed at locations where borings, surveys, or explorations are made, and that site conditions may change with time. Data, interpretations, and recommendations by COMPANY will be based solely on information available to COMPANY. COMPANY is responsible for those data, interpretations, and recommendations, but will not be responsible for other parties' interpretations or use of the information developed.

Services performed by COMPANY under this AGREEMENT are expected by CLIENT to be conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession practicing contemporaneously under similar conditions in the locality of the project. Under no circumstances is any warranty, expressed or implied, made in connection with the providing of services.

**SITE ACCESS AND SITE CONDITIONS:** CLIENT will grant or obtain free access to the site for all equipment and personnel necessary for COMPANY to perform the work set forth in this AGREEMENT. CLIENT will notify any and all possessors of the project site that CLIENT has granted COMPANY free access to the site. COMPANY will take reasonable precautions to minimize damage to the site, but it is understood by CLIENT that, in the normal course of work, some damage may occur and the correction of such damage is not part of this AGREEMENT unless so specified in the PROPOSAL.

COMPANY will take reasonable precautions to avoid known subterranean structures and utilities, and CLIENT waives any claim against COMPANY, and agrees to defend, indemnify, and hold COMPANY harmless from any claim or liability for injury or loss, including costs of defense, arising from damage done to subterranean structures and utilities not identified or accurately located. In addition, CLIENT agrees to compensate COMPANY for any time spent or expenses incurred by COMPANY in defense of any such claim, with compensation to be based upon COMPANY's prevailing fee schedule and expense reimbursement policy.

**OBSERVATION:** If COMPANY is retained by CLIENT to provide a site representative for the purpose of observing specific portions of construction work or other field activities as set forth in the PROPOSAL, then this section applies.

For the specified assignment, COMPANY will report observations and professional opinions to CLIENT. No action of COMPANY or COMPANY's site representative can be construed as altering any AGREEMENT between CLIENT and others. COMPANY will report to CLIENT any observed site condition related to the work which, in COMPANY's professional opinion, does not conform with plans and specifications. The COMPANY has no right to reject or stop work of any agent of the CLIENT. Such rights are reserved solely for CLIENT. Furthermore, COMPANY's presence on site does not in any way guarantee the completion or quality of the performance of the work of any party retained by CLIENT to provide field or construction-related services.

COMPANY will not be responsible for any, will not have control or charge of specific means, methods, techniques, sequences or procedures of construction or other field activities selected by any agent of AGREEMENT of CLIENT, or safety precautions and programs incident thereto, unless otherwise specified by contract terms.

**BILLING AND PAYMENT:** Invoices will be submitted to CLIENT by COMPANY, and will be due and payable upon presentation. If CLIENT objects to all or any portion of any invoice, CLIENT will so notify COMPANY in writing within fourteen (14) calendar days of the invoice date, identify the cause of disagreement, and pay when due that portion of the invoice not in dispute. The parties will immediately make every effort to settle the disputed portion of the invoice. In the absence of written notification described above, the balance as stated on the invoice will be paid.

Invoices are delinquent if payment has not been received within sixty (60) days from date of invoice. CLIENT will pay an additional charge of one and one-half (1.5) percent per month (or the maximum percentage allowed by law, whichever is lower) on any delinquent amount, excepting any portion of the invoiced amount in dispute and resolved in favor of CLIENT. Payment thereafter will first be applied to accrued interest and then to the principal unpaid amount. All time spent and expenses incurred (including attorney's fees) in connection with collection of any delinquent amount will be paid by CLIENT to COMPANY per COMPANY's current fee schedules. In the event, CLIENT fails to pay COMPANY within sixty (60) days after invoices are rendered, CLIENT agrees that COMPANY will have the right to consider failure to pay COMPANY's invoice as a breach of this

**McGINLEY & ASSOCIATES, INC.**  
**TERMS FOR PROFESSIONAL SERVICES**  
**PAGE 2**

AGREEMENT.

**TERMINATION:** This AGREEMENT may be terminated by either party seven (7) days after written notice in the event of any breach of any provision of the AGREEMENT or in the event of substantial failure of performance by the other party, or if CLIENT suspends the work for more than three (3) months. In the even of termination, COMPANY will be paid for services performed prior to the date of termination plus reasonable termination expenses, including, but not limited to the cost of completing analyses, records, and reports necessary to document job status at the time of termination.

**RISK ALLOCATION:** Many risks potentially affect COMPANY by virtue of entering into this AGREEMENT to perform professional services on behalf of CLIENT. The principal risk is the potential for human error by COMPANY. For CLIENT to obtain the benefit of a fee which includes a nominal allowance for dealing with COMPANY's liability, CLIENT agrees to limit COMPANY's liability to CLIENT and to all other parties for claims arising out of COMPANY's performance of the services described in the AGREEMENT. The aggregate liability of COMPANY will not exceed \$50,000.00, or the cost of professional services, which ever is the lesser for negligent professional acts, errors, or omissions, and CLIENT agrees to indemnify and hold harmless COMPANY from and against all liabilities in excess of the monetary limit established above.

Limitations on liability and indemnities in this AGREEMENT are business understandings between the parties voluntarily and knowingly entered into, and shall apply to all theories of recovery including, but not limited to, breach of contract, warranty, tort (including negligence), strict of statutory liability, or any other cause of action, except for willful misconduct or gross negligence. The parties also agree that CLIENT will not seek damages in excess of the limitations indirectly through suits with other parties who may join COMPANY as a third-part defendant. Parties means CLIENT and COMPANY and their officers, employees, agents, affiliates, and subcontractors.

Both CLIENT and COMPANY agree that they will not be liable to each other, under any circumstances, for special, indirect, consequential, or punitive damages arising out of or related to this AGREEMENT.

**DISCOVERY OF UNANTICIPATED HAZARDOUS MATERIALS:** Hazardous materials may exist at a site where there is no reason to believe they could or should be present. COMPANY and CLIENT agree that the discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work or termination of services. COMPANY and CLIENT also agree that the discovery of unanticipated hazardous materials may make it necessary for COMPANY to take immediate measures to protect health and safety. CLIENT agrees to compensate COMPANY for any equipment decontamination or other costs incident to the discovery of unanticipated hazardous materials.

COMPANY agrees to notify CLIENT when unanticipated hazardous materials or suspected hazardous materials are encountered. CLIENT recognizes the existence of law and agrees to make any disclosures required by such law to the appropriate governing agencies. CLIENT also agrees to hold COMPANY harmless for any and all consequences of disclosures made by COMPANY which are required by governing law. In the event the project site is not owned by CLIENT, CLIENT recognized that it is CLIENT's responsibility to inform the property owner of the discovery of unanticipated hazardous materials or suspected hazardous materials.

Notwithstanding any other provision of the AGREEMENT, CLIENT waives any claim against COMPANY and, to the maximum extent permitted by law, agrees to defend, indemnify, and save COMPANY harmless from any claim, liability, and/or defense costs for injury or loss arising from COMPANY's discovery of unanticipated hazardous materials or suspected hazardous materials, including, but not limited to, any costs created by delay of the project, and any cost associated with the possible reduction of the property's value.

**DISPUTES RESOLUTION:** All claims, disputes, and other mattes in controversy between COMPANY and CLIENT arising out of or in any way related to this AGREEMENT will be submitted to "alternative dispute resolution" (ADR) before and as a condition precedent to other remedies provided by law. If and to the extent CLIENT and COMPANY have agreed on methods for resolving such disputes, then such methods will be set forth in the "Alternative Dispute Resolution Agreement" which, if attached, is incorporated into and made a part of this AGREEMENT. If no specific ADR procedure is set forth in this AGREEMENT, then it shall be understood that the parties shall submit disputes to mediation as a condition precedent to litigation.

If a dispute at law arises from matters related to the services provided under this AGREEMENT and that dispute requires

**McGINLEY & ASSOCIATES, INC.**  
**TERMS FOR PROFESSIONAL SERVICES**  
**PAGE 3**

litigation instead of ADR as provided above, then:

- (1) the claim will be brought and tried in judicial jurisdiction of the court of the county where COMPANY's place of business is located and CLIENT waives the right to remove the action to any other county or judicial jurisdiction , and
- (2) the prevailing party will be entitled to recovery of all reasonable costs incurred, including staff time, court costs, attorney's fees and other claim related expenses.

**GOVERNING LAW AND SURVIVAL:** The law of the State of Nevada will govern the validity of these TERMS, their interpretation and performance. If any of the provisions contained in this AGREEMENT are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions will not be impaired. Limitations of liability and indemnities will survive termination of this AGREEMENT for any cause.

The parties have read the foregoing, understand completely the TERMS, and willingly enter into this AGREEMENT which will become effective on the date signed below by Client.

\_\_\_\_\_  
CLIENT

McGINLEY & ASSOCIATES, INC.  
COMPANY

\_\_\_\_\_  
By

\_\_\_\_\_  
By

\_\_\_\_\_  
Position

Project Manager  
\_\_\_\_\_  
Position

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date



P.O. Box 13047  
Reno, NV 89507  
Office 775.786.1122  
Fax 775.786.2726  
PILB #700  
CA PPO Lic. #16693

## COVER SHEET

**Attention:** Tony Dimpel  
**Organization:** Greenu Commodities, LLC  
**From:** ESI Security Services  
**Subject:** **Greenu Facility On-Site Security**  
**Date:** May 30, 2014  
**Pages:** 2

Comments: Invoice #GFOS2014

Please review the following information and let us know if it meets your needs. If you agree with the following estimate please sign below and fax back to us 775-786-2726. We will begin scheduling your event after we receive confirmation from you. **The hours we accept faxed estimates are Monday through Friday, 8:30 A.M. to 4:30 P.M. for same day services. If you require immediate services after business hours, please call 775-626-3000 to set up services.**

Thank you

I approve the estimate and authorize ESI Security Services to provide security for my event:

\_\_\_\_\_  
Print

\_\_\_\_\_  
Sign

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

**\*\*\*PLEASE NOTE, WE WILL NOT SCHEDULE YOUR EVENT UNLESS WE RECEIVE THIS FAX RETURNED SIGNED\*\*\***



P.O. Box 13047  
Reno, NV 89507  
Office 775.786.1122  
Fax 775.786.2726  
PILB #700  
CA PPO Lic. #16693

May 30, 2014

**ESTIMATE**

#GFOS2014

Tony Dimpel  
Greenu Commodities, LLC  
1050 South 21st Street  
Sparks , NV 89431  
Phone:(775) 829-2245  
E-Mail: tdimpel@mcgin.com

The estimated daily cost of security for the Greenu Facility located at 11000 US ALT Hwy 50 in Fernley, Nevada is as follows:

**Shift One: On-Site Times 6AM-2PM**

5:00 A.M.- 3:00 P.M.	1 Security	\$18.00/hr	10 Hrs*	1 Day	\$	180.00
Marked Vehicle	1 Vehicle	\$65.00/car		1 Day	\$	65.00

**Shift Two: On-Site Times 2PM-10PM**

1:00 P.M.- 11:00 P.M.	1 Security	\$18.00/hr	10 Hrs*	1 Day	\$	180.00
Marked Vehicle	1 Vehicle	\$65.00/car		1 Day	\$	65.00

**Shift Three: On-Site Times 10PM-6AM**

9:00 P.M.- 7:00 A.M.	1 Security	\$18.00/hr	10 Hrs*	1 Day	\$	180.00
Marked Vehicle	1 Vehicle	\$65.00/car		1 Day	\$	65.00

**Total Estimate Daily Cost for Greenu Facility Security** \$ **735.00**

\*Total Hours Include (1) hour of travel time each way between Reno and Fernley.

This is the estimated cost of security for the Greenu Facility On-Site Security . Thank you for choosing ESI Security Services. Please call if you have any questions or require any additional information.

Sincerely,

Mike Hendi  
C.E.O.

# **ATTACHMENT 7**

---

**Trust Fund**

## AGREEMENT OF TRUST

THIS AGREEMENT OF TRUST (the "Agreement") is entered into as of the 28<sup>th</sup> of February, 2014, by and between GREENU COMMODITIES, LLC., a Nevada limited liability corporation (the "Grantor"), and Zions First National Bank, a national banking association (the "Trustee").

### RECITALS

WHEREAS, the Nevada Division of Environmental Protection ("NDEP"), has established certain regulations applicable to the Grantor, requiring that an owner or operator of a Solid Waste Management Facility shall provide assurance that funds will be available when needed for closure and/or post-closure care of the facility.

WHEREAS, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the facilities identified herein.

WHEREAS, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

### AGREEMENT

NOW THEREFORE, the Grantor and the Trustee agree as follows

1. **Definitions.** As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

(c) The term "Beneficiary" means NDEP or its designee.

2. **Identification of Facilities and Cost Estimates.** This Agreement pertains to the facility and cost estimate identified on attached Exhibit A.

3. **Establishment of Fund.** The Grantor and the Trustee hereby establish a trust fund (the "Fund") for the benefit of NDEP. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially without funding, which is not required until waste is placed in the landfill. Any property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty

to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by NDEP.

4. **Payment for Closure and Post-Closure Care.** The Trustee shall make payments from the Fund as the NDEP Administrator shall direct, in writing, to provide for the payment of the costs of closure and/or post-closure care of the facilities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the NDEP Administrator from the Fund for closure and post-closure expenditures in such amounts as the NDEP Administrator shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the NDEP Administrator specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

5. **Payments Comprising the Fund.** Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

6. **Trustee Management.** The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge its duties with respect to the trust fund solely in the interest of the Beneficiary and with the care, skill, prudence, and diligence tinder the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(b) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(c) The Trustee is authorized to hold cash awaiting investment or distribution un-invested for a reasonable time and without liability for the payment of interest thereon.

7. **Commingling and Investment.** The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and,

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a—1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

8. **Express Powers of Trustee.** Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and,

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

9. **Taxes and Expenses.** All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

10. **Annual Valuation.** The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the NDEP Administrator a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the NDEP Administrator shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

11. **Advice of Counsel.** The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

12. **Trustee Compensation.** The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

13. **Successor Trustee.** The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing Sent to the Grantor, the NDEP Administrator, and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

14. **Instructions to the Trustee.** All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with orders, requests, and instructions which the Trustee in good faith believes have been executed on behalf of the Grantor by one or more of the persons designated on Exhibit A or any amendments thereto. All orders, requests, and instructions by the NDEP Administrator to the Trustee shall be in writing, signed by the NDEP Administrators of the Regions in which the facilities are located, or their designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions which the Trustee in good faith believes to have been executed and delivered by such persons. The Trustee shall have the right to assume, in the absence of written

notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or NDEP hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or NDEP, except as provided for herein.

15. **Notice of Nonpayment.** The Trustee shall notify the Grantor and the appropriate NDEP Administrator, by certified mail within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust if no payment is received from the Grantor during that period (the "Pay-in Period"). After the Pay-in Period is completed, the Trustee shall not be required to send a notice of nonpayment.

16. **Amendment of Agreement.** This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the appropriate NDEP Administrator, or by the Trustee and the appropriate NDEP Administrator if the Grantor ceases to exist.

17. **Irrevocability and Termination.** Subject to the right of the parties to amend this Agreement as provided, in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the NDEP Administrator, or by the Trustee and the NDEP Administrator, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

18. **Immunity and Indemnification.** The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the NDEP Administrator issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the AMVK Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

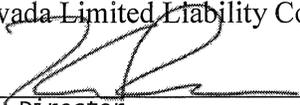
19. **Choice of Law.** This Agreement shall be administered, construed, and enforced according to the laws of the State of Nevada.

20. **Interpretation.** As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed by their respective officers duly authorized as of the date first above written: The parties below certify that this Agreement is being executed in accordance with the requirements of Section 444.685 of the Nevada Administrative Code.

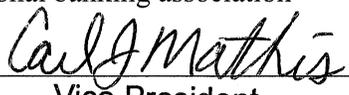
**"Grantor"**

GREENU COMMODITIES, LLC.,  
A Nevada Limited Liability Corporation

By:  \_\_\_\_\_  
Its: Director

**"Trustee"**

Zions First National Bank, as Trustee,  
a national banking association

By:  \_\_\_\_\_  
Its: Vice President



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 Solid Waste Branch

The estimate shall be completed by the operator/owner or duly recognized representative to include the following information:

The cost estimate for a third party to cleanup the site along with the detail of how this estimate was calculated, as described below. The estimate shall be developed for the activities anticipated for closure, including disposition of waste tires and tire residues, equipment, labor and administration. Attach the cost estimate and all supporting documentation used in arriving at the closure cost estimate.

Calculate the Total Closure Cost Estimate in dollars for the waste tire facility being closed. You may use the formula provided below or an alternative formula that estimates the total cost to close the facility in accordance with applicable requirements.

$$\text{Total Closure Cost Estimate (TCC)} = 1.2 * (\text{Transportation Cost} + \text{Destination Charge} + \text{Loading Cost} + \text{Administration Cost} + \text{Security Cost})$$

WHERE:

"Transportation Cost" represents the total cost of transportation for all loads of tires leaving the facility as well as the cost of the vehicles returning. The Transportation Cost shall be computed using the following formula:

$$\text{Transportation Cost (\$)} = M * MT * TC$$

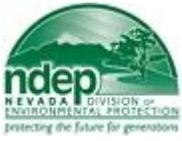
Factor "M" (miles) represents the total distance (round trip mileage) to be covered by a vehicle transporting a load, from the closing facility to a facility selected by the operator that would accept the waste tires in the form that they are, or will be stored (e.g., shreds vs. whole).

Factor "MT" (number of round trips) represents the number of truck loads of waste tires that will be required during the cleanup. The number of truck loads for a particular size waste tire is determined by dividing the total number of waste tires that are of one size (e.g., passenger) by the number of waste tires of that size that can fit into one truck load. Fewer large over sized tires can be hauled by the same truck that is also used for passenger tires. "MT" should be based on the maximum number of loads that will be necessary to cleanup the site. This will be based on the maximum quantity of waste tires that the operator is seeking a permit to store as specified in the Operation Plan; however the method of storage shall be taken into consideration. For example, if the operator intends to store only shredded waste tires in the future, but is presently storing whole waste tires, the calculations should be based on whichever storage condition requires the greatest cleanup cost.

Factor "TC" (\$ per load per mile) represents the cost per mile to transport a load of waste tires. The cost includes the average expenses for transportation equipment, fuel, driver wages, tolls, and the vehicle's maintenance. This cost will vary based on the size of vehicle.

"Destination Charge" represents the total cost of tipping fees or disposal fees for all loads of waste tires transferred from the cleanup site to the destination facility. The Destination Charge shall be computed using the following formula:

$$\text{Destination Charge (\$)} = MT * TF$$



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Factor "MT" is described above.

Factor "TF" (\$ per load) represents the cost to deposit waste tires at the destination facility. This may be a tipping fee or a disposal fee. If the fee is expressed in dollars per ton then this number must be multiplied by the weight of the load in order to yield dollars per load. The tipping fee should be based on the form of the waste tires (e.g., shreds vs. whole).

"Loading Cost" represents the total cost of loading all loads of tires into vehicles at the closure facility and unloading the vehicles at the final destination. The Loading Cost shall be computed using the following formula:

$$\text{Loading Cost (\$)} = \text{MT} * \text{LC}$$

Factor "MT" is described above.

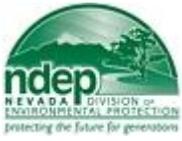
Factor "LC" (\$ per load) represents the unit cost to load one vehicle with waste tires at the closing facility, and to unload the same waste tires at the final destination. This cost includes operational expenses, which covers wages for workers and prorated expenses for rental or lease of equipment and machinery.

"Administration Cost" (\$) represents the total cost of administration activities for the entire closure operation. This cost shall include the wages for personnel overseeing the cleanup activities and other operating expenses for the entire project.

"Security Cost" (\$) represents the total cost of security arrangements for the entire closure operation. This is the cost to secure the site and restrict public access. This cost covers the expenses for the entire cleanup operation and includes installation of a site fence, installation or repair of lighting, and wages for security guards, etc.

Notes:

1. Total Closure Cost Estimate will vary according to the facility's design and operation as presented in the Operation Plan.
2. All costs will be added and then multiplied by the contingency factor of 1.2 to estimate the Total Closure Cost for the cleanup.
3. Any deviations from the above formula must be explained.
4. Complete a separate closure cost estimate worksheet if the waste tires are to be transported to more than one point of destination.

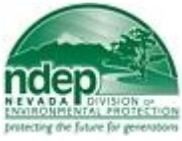


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*Use this area to calculate the  
Costs for your facility*





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WHERE:

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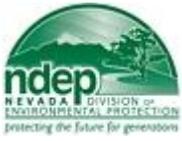
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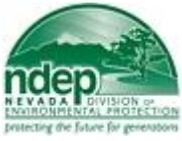
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Notes:

1. Total Closure Cost Estimate will vary according to the facility's design and operation as presented in the Operation Plan.
2. All costs will be added and then multiplied by the contingency factor of 1.2 to estimate the Total Closure Cost for the cleanup.
3. Any deviations from the above formula must be explained.
4. Complete a separate closure cost estimate worksheet if the waste tires are to be transported to more than one point of destination.

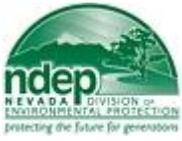


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*Use this area to calculate the  
Costs for your facility*





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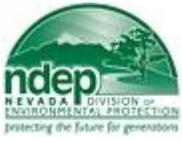
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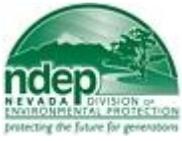
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*Use this area to calculate the  
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May 29, 2014

State of Nevada

Department of Conservation & Natural Resources

Re: Updated Waste Tire Management Facility – Total Closure Costs (TCC)

To Whom It May Concern:

The following provides for an explanation of the Total Closure Cost (TCC) estimate for the obtainment of the waste tire management facility permit and the necessary financial assurance mechanism; as per Nevada Division of Environmental Protection (NDEP) Solid Waste Branch Guidelines:

Total Closure Cost Estimate (TCC) = 1.2 (Transportation Cost + Destination Charge + Loading Cost + Administration Cost + Security Cost)

**TCC For GreeNu Facility = \$1,215,277.40**

Transportation Cost:

The GreeNu facility will have four (5) products that may need to be hauled away should the facility close: Tire Bales, Carbon Black, Liquid Fuel, Scrap Steel, and a 250 gallon propane tank. As discussed in the permit application the scrap steel will be removed by the steel recyclers providing the open-top roll-off containers as they own the container.

Transportation for: Tire Bales & Carbon Black

Facilitated by: Western Nevada Transport (WNT)

Contact: Paul Gianoli

*Reference: See attached Quote from WNT*

Cost Figures: \$17.00/Ton Tire Bales  
9,600 Tons of Tire Bale Material

\$25.00/Ton Haul Carbon Black  
580 Tons of Carbon Black Material

Destination: Lockwood Landfill  
34.9 Miles or 69.8 Miles Roundtrip

Costs: Tire Bale Transportation Cost: \$163,200.00

Carbon Black Transportation Cost: \$14,500.00

Transportation for: Fuel

Facilitated by: Best Environmental

Contact: Marty

*Reference: See attached Quote from Best Environmental*

Cost Figures: \$200.00/Load  
29 Loads

Destination: Best Environmental – Silver Springs, NV

Costs: Pump/Transport: \$5,800.00

**\$183,500 Total Transportation Cost**

Destination/Disposal Charge for: Tire Bales & Carbon Black

Facilitated by: Lockwood Landfill – Waste Management

Contact: Chris Anderson – District Manager

*Reference: See attached quote from Lockwood Landfill*

Costs: \$35.75/Cubic Yard  
Bale = 1.83 Cubic Yard = \$65.2/Bale @ ea.  
9,600 Bales Total  
9,600 x \$65.42/Bale  
Destination Charge \$628,032.00

Costs: \$19.95/Cubic Yard  
0.27 Tons = 1 Cubic Yard  
580 Tons = 156.6 Cubic Yards  
156.6 x \$19.95/Bale  
Destination Charge \$3,124.17

Destination/Disposal Charge for: Fuel

Facilitated by: Best Environmental

Contact: Marty

*Reference: See attached Quote from Best Environmental*

Cost Figures: \$0.50/Gal  
200,000 Gal

Destination: Best Environmental – Silver Springs, NV  
Costs: Recycle/Blending: \$100,000.00

**\$731,156 Total Destination Cost**

Loading Cost:

Potential loading costs for the GreeNu facility include: Loading Tire Bales on tipper trucks, loading carbon black from storage tanks to hopper-dump truck, and Loading Fuel from tank(s) to fuel truck.

Loading for: Tire Bales

Facilitated by: Western Nevada Transport (WNT)  
Contact: Paul Gianoli  
*Reference: See attached quote from WNT*

Cost Figures: \$1000/Day – Forklift and operator  
8 Hr. Day = 8.7 Loads/Day/Truck  
3 Trucks Hauling = 26.1 Loads/Day  
400 Total Loads/26.1 Loads/Day = 15.3 Days

Costs: 20 Loading Days  
\$1000/Day – Forklift and operator  
Tire Bale Loading Cost \$20,000.00

Loading for: Carbon Black

Facilitated by: Western Nevada Transport (WNT)  
Contact: Paul Gianoli  
*Reference: See attached quote from WNT*

Truck will automatically be loaded by equipment on site

Carbon Black Loading Cost \$0.00

Loading for: Fuel

Facilitated by: Best Environmental  
Contact: Marty  
*Reference: See attached Quote from Best Environmental*

Cost Figures: Included in Disposal Cost

Destination: Best Environmental – Silver Springs, NV

Fuel Loading Cost \$0.00

**\$20,000.00 Total Loading Cost**

Administrative Cost:

Facilitated by: McGinley & Associates

Contact: Tony Dimpel

*Reference: See attached quote from McGinley & Associates*

Costs: \$25,000.00

Total Administrative Cost \$25,000.00

**\$25,000.00 Total Administrative Cost**

Security Cost:

Facilitated by: ESI Security Services

Contact: Mike Hendi

*Reference: See attached quote from ESI Security Services*

Costs: \$735/per 24 hour day

Costs: Max Number of Day Security Should be Required = 45  
Security Costs \$33,075

Removal of 250 gallon propane tank:

Cost: \$20,000\*

\*No cost estimate was obtained for the removal of the 250 gallon propane tank. It was very conservatively assumed that \$20,000 will provide more than enough funds to facilitate the removal of the propane tank.

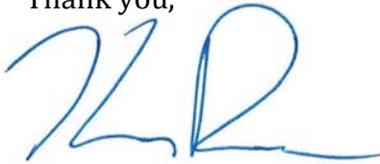
OVERVIEW:

Total Closure Cost Estimate (TCC) = 1.2 (Transportation Cost + Destination Charge + Loading Cost + Administration Cost + Security Cost + Propane Tank Removal)

**\$1,215,277.40 = 1.2 (\$183,500 + \$731,156 + \$20,000 + \$25,000 + \$33,075 + \$20,000)**

Please reference the following attachments for verification of each aspect of the TCC in regards to the GreeNu Commodities Project.

Thank you,



Kevin Rose - Director



DATE: 2/11/2014

GWCEC

601 Pennsylvania Avenue NW  
 Suite 900 S Building  
 Washington, D.C. 20004

CONTACT:

ATTN: KEVIN ROSE

P: 253.307.4339

F: 703.563.6030

email: krose@gwecc.com

JOB NAME:

HAUL TIRE BALES FROM GreeNu SITE (WNRP) TO LOCKWOOD LANDFILL

QUOTE:

TIRE BALES	9600 TONS	\$17.00/TON	\$163,200.00
LOAD TIRE BALES	\$1000.00/Day	20 DAYS	\$20,000.00
HAUL CARBON BLACK	580 TONS	\$25.00/TON	\$14,500.00
<b>TOTAL</b>			<b>\$ 197,700.00</b>

**CONDITIONS:**

- 1.) Loading Carbon Black is GreeNu's responsibility.
- 2.) Unloading of Tire Bales & Carbon Black is the responsibility of others.
- 3.) STANDBY: \$80.00 Per Hour After:
  - One (1) Hour to Unload.
- 4.) Payment Terms: Net 30 Days.
- 5.) RETURN LOAD: 50% of quoted rate.
- 6.) MINIMUM LOAD: 24 Tons (Semi).

QUOTED BY:

*Paul R. Gianoli*

Paul R. Gianoli

WESTERN NEVADA TRANSPORT, LLC.

*02/11/2014*

DATE

ACCEPTED BY: \_\_\_\_\_

DATE

---

**From:** Kevin Anderson [mailto:[kanderson@h2oenvironmental.net](mailto:kanderson@h2oenvironmental.net)]

**Sent:** Wed 2/12/2014 9:26 AM

**To:** Larry Appel

**Cc:** [martyf@bstenvironmental.com](mailto:martyf@bstenvironmental.com)

**Subject:** RE: Estimate

Hi Larry,

I spoke to Marty (775-577-9001) @ Best Environmental in Silver Springs NV and he stated they would be able to pump, transport and recycle/blend this product.

29 loads @ \$200/load = \$5800.00

Recycle/blending @ \$0.50/gallon x 200,000 gallons = \$100,000

**Total would be \$105,800.00**

Marty did have a few questions on the product if you would not mind him contacting you.

Once you folks are up and running, please keep us in mind for any industrial cleanings, confined space entry cleanings, any and all waste management and 24-hour emergency response. You can find out more about us @ [h2oenvironmental.org](http://h2oenvironmental.org)

Thanks and have a great day!

Kevin Anderson

H2O Environmental, Inc

Reno General Manager

Ph: 775-351-2237

Fax: 775-351-2219

[kanderson@h2oenvironmental.net](mailto:kanderson@h2oenvironmental.net)

Nevada License - 0052215

California License - 809096

---

**From:** Larry Appel [<mailto:Larry@advancedteksystems.com>]

**Sent:** Monday, February 10, 2014 4:25 PM

**To:** [kanderson@h2oenvironmental.net](mailto:kanderson@h2oenvironmental.net)

**Subject:** Estimate

Hello Kevin,

Good talking to you.

As discussed, I'm looking for an estimate to satisfy the NDEP Financial Assurance Calculation for the NDEP Waste Tire Management Facility permit. One of the products we would need to dispose of in the event of a plant shutdown is pyrolysis derived oil, essentially the equivalent of diesel #4.

I've attached the MSDS sheet as well as a pyrolysis oil and gas analysis. The pyro gas will not be a problem but at max capacity, we would need to dispose of 200,000 gals of pyro oil stored in underground tanks.

Judging from the conversations with the NDEP, they will want to know the method and location of disposal as well as the transportation costs.

Please call with any questions.

Thanks!

***Larry Appel***

***Chief Executive Officer***

***Advanced Tek Systems***

(253) 219-9507 Cell

[Larry@AdvancedTekSystems.com](mailto:Larry@AdvancedTekSystems.com)

[www.AdvancedTekSystems.com](http://www.AdvancedTekSystems.com)

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 **SOQ updated August 2013.pdf**  
2112K



environmental

**24 HR. HAZMAT EMERGENCY RESPONSE TEAM**

# STATEMENT OF QUALIFICATIONS



**Serving the Western United States from Offices in:  
Boise ♦ Las Vegas ♦ Reno ♦ Phoenix**

**866/H2O-SPILL  
[www.h2oenvironmental.org](http://www.h2oenvironmental.org)**

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6679 S. Supply Way, Boise, ID 83716  
phone: 208.343.7867 fax: 208.322.2670  
[www.h2oenvironmental.org](http://www.h2oenvironmental.org)



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

## **INTRODUCTION**

H2O Environmental, Inc. was started in 1996 by John Bradley, the company's Chief Executive Officer. John saw a growing need for a statewide environmental company to service Nevada. In 1996, the company's first office was opened in Las Vegas and quickly gained recognition as a qualified and diverse environmental company. A second office was opened in Reno in 1999. The company opened its third office in Boise, Idaho in 2007 which now also serves as its corporate headquarters. In 2009, a fourth office was opened in Chandler, Arizona.

With these strategically selected office locations, the company is able to effectively and efficiently serve its clients throughout the Western United States.

H2O operates and maintains a large fleet of specialized equipment including the following: air movers, vacuum tankers, vacuum trucks, environmental roll-off bins, end dumps/side dumps, excavation equipment, confined-space entry gear, and traffic control and drum handling equipment.

The company is also an oil spill response organization (OSRO) capable of containing and removing oil releases into inland waterways.

## **MISSION STATEMENT**

H2O Environmental, Inc. is a full-service hazardous waste remediation, transport, disposal and emergency spill response company. We provide customized service by sharing client objectives while giving constant attention to cost effective solutions. We make a situation more manageable by simplifying complex physical and regulatory conditions.

Our experience enables us to analyze a situation and outline steps that achieve environmentally conscious results. We effectively interact with regulatory agencies to facilitate acceptance of sound solutions. We adhere to strict health and safety standards for the welfare of all concerned. Our sworn commitment is to protect the environment.



*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**SERVICE LINES**

**Transportation**

Vacuum Truck Service (DOT specification & full-opening rear door, all sizes)  
Vactor Air Movers (liquid, sludge & dry powder material removal)  
Roll-off Bin Service (various sizes for hazardous waste)  
Dump Trucks (heavy duty demolition beds)  
Double Bottom Dumps  
Double Side Dumps  
Heavy Haul  
Box Van Transportation

**Remediation**

Mold Sampling and Removal  
Illegal Clandestine Drug Lab Removal  
Crime Scene, Suicide, Natural Death Removal  
Infectious Disease and Chemical Decontamination  
Treatment of Petroleum Contaminated Soils and Wastewater  
Marijuana Grow Removal

**Excavation**

Contaminated Soil Excavation (industrial and hazardous)  
Underground and Above Ground Storage Tank Removal  
Vapor Extraction System Installation  
Septic Tank and Leach Field Installation  
Sand/Oil Separator and Grease Trap Installation

**Waste Management**

Manifesting, Packaging, Transportation and Disposal of Hazardous Waste  
Industrial and Hazardous Liquid Waste Hauling  
Sand/Oil Separator and Grease Trap Pumping  
Conditionally Exempt Small Quantity Generator Waste Programs (CESQG)  
Chemotherapy and Infectious Wastes  
Unknown Waste Identification  
Drum Disposal (landfill or incineration)  
Certified Environmental Manager Services  
Radioactive Management and Disposal Services



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**Industrial Cleaning**

Storm Drain & Culvert Hydro-jetting  
Sewer Cleaning & Video Inspection  
Tank Cleaning (above and underground)  
Lift Stations  
Confined-Space Entry Teams

**24 Hr. Hazmat Spill Response**

Oil Spill removal from Rivers, Lakes and other waterways (OSRO)  
Oil, Chemical, Biological Spill Response (Level-A)  
Shifted and Leaking Semi-Trailer Loads  
Fuel Truck Fires



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**EQUIPMENT INVENTORY**

All equipment is strategically disbursed between all offices

**Pumping & Cleaning**

- 5 - Stainless Steel Vacuum Tankers (6,000 gallon, DOT-407/412)
- 3 - Vacuum Tankers (5,000 gallon, self-contained pump, DOT-407/412)
- 2 - Vacuum Skid (3,000 gallon, full-opening rear door, DOT-407/412)
  - 1 - Tanker Trailer (3,000 gallon)
- 5 - Vactor Air Movers (2,500 gallon with hydro-jetters)
- 3 - GapVax Wet/Dry Industrial Vacuum Truck (3,000 gallon, 28" vacuum)
- 3 - Vacuum Trucks (3,000 gal. to 6,000 gal. capacity and full opening rear door)
  - 1 - Portable TPH Vapor Extraction Unit (trailer mounted)
  - 1 - Hydro Jetter (jets storm drain/sewer line)
- 6 - Steam Cleaners (3,000 psi./3 gpm, trailer mounted with 300 gallon water tank)
  - 1 - 4"Centrifugal High Volume Liquid Pumps (trailer mounted)
  - Video Pipeline Inspection Camera & Line Locator
  - 1 - 24,000 psi Hydro Blaster

**Excavation**

- 1 - Cat 330 Excavator (with thumb)
  - 1 - Cat 322 Excavator
  - 3 - Cat 320 Excavators
  - 3 - Cat 315 Excavator
  - 1 - Cat 307 Excavator
  - 1 - ZX 200 Hitachi Excavator
- 1 - Cat 312 Excavator (with hydraulic breaker attachment)
  - 1 - Cat Mini-Excavator
  - 2 - Cat Backhoe (4WD, enclosed cab)
  - 2 - Case 580M Backhoe (4WD, enclosed cab)
  - 1 - Cat Track Loader (enclosed cab)
    - 1 - Cat 938 Loader
    - 1 - Cat 939 Loader
  - 2 - Cat Skid Steer Loader (with hydraulic drum turner)
- 3 - 95XT Case Skid Steer Loader (with hydraulic drum turner)
  - 8- Side Dump Trailers (20-ton)
  - 9 - 10 Wheel Dump Trucks
- 1 - Heavy Duty Dump Truck & Trailer (30-ton capacity)
  - Air Compressor, Concrete Saw, 5K Generator
  - 1 - Volvo A25C Articulated Off Road Dump Truck
  - 1 - Cat D250 Articulated Off Road Dump Truck
  - 3 - Trailboss Tilt Deck Equipment Trailers
  - 1 - 50,000 lb. Equipment Transport Trailer
  - 2 - 15,000 lb. Equipment Transport Trailers



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**Roll-Off, Transportation & Spill Response**

- 12 - Semi Tractors (3-axle with hydraulic kits)
- 5 - 48' Semi-Van Trailer (with lift gate)
- 5 - 10 wheel Roll-Off Truck
- 4 - Roll-Off Trailers (53' Rocket Launcher)
- 60 - Roll-Off Bins (18 thru 30-yard capacity)
- 5 - Emergency Response Vehicles (fully stocked)
- 2 - Hazardous Materials Response Units (with generators and compressors)
- 8 - 5 Ton Gear Trucks (fully stocked)
- 1 - 32' Command Center
- 3 - Emergency Response Trailers (fully stocked with exterior lighting)
- 5 - John Boats with Outboard Motors

**Other Specialized Equipment**

- 100,000 Gallons of Storage Tank Capacity
- 15 - Portable Storage Tanks (500 thru 5,000 gallon)
- 2 - Carbon Vessels (1 cu. yard, treats liquid or air emissions)
- 6,000-Linear Feet of 18-inch Containment Boom (petroleum spills on water)
- 1 - 12' Rock Screen (Grizzly)
- Highway Traffic Control Equipment (arrow boards, cones, traffic signs)
- 1 - Highway Attenuator Crash Box
- 14 - HEPA Negative Air Machines
- 8 - HEPA Vacuums
- 5 - Mercury Vacuums
- 3 - Satellite Phones
- 6 - Air Monitors (LEL, O2, CO, H2S)
- Ohio Lumex RA915 Light - Mercury Vapor Analyzer
- Confined-Space Gear, SCBA's and Level A Suits



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**OFFICE LOCATIONS & CONTACTS**

**Boise**

6679 S. Supply Way  
Boise, ID 83716  
(208) 343-7867 office  
(208) 322-2670 fax

Contact: Joe Wickenden (General Manager)

**Las Vegas**

4435 E. Colton Ave, Suite 101  
Las Vegas, NV 89115  
(702) 396-4148 office  
(702) 643-8635 fax

Contact: Perry Pearson (General Manager)

**Reno**

3510 Barron Way, Suite 200  
Reno, NV 89511  
(775) 351-2237 office  
(775) 351-2219 fax

Contact: Greg Scyphers (General Manager)

**Arizona**

2364 South Airport Blvd. – Suite 2  
Chandler, AZ 85249  
(602) 258-3388 office  
(602) 258-3266 fax

Contact: Kris Ahrens (General Manager)

---

6679 S. Supply Way, Boise, ID 83716  
phone: 208.343.7867 fax: 208.322.2670  
[www.h2oenvironmental.org](http://www.h2oenvironmental.org)



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

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**DISPOSAL SITES**

**Landfills**

**US Ecology - Nevada**

12 Miles South of Beatty  
Beatty, NV 89002  
(800) 239-3943  
NVT330010000

**US Ecology – Idaho**

20400 Lemley Rd.  
Grand View, ID 83624  
(208) 834-2275

**Idaho Waste Systems**

16415 NW Waste Site Drive  
Mayfield, Idaho 83716  
(208) 796-2727

**Waste Management – Lockwood**

2401 Canyon Way  
Sparks, NV 89434  
(775) 342-0401

**Waste Management – Butterfield**

40404 S. 99<sup>th</sup> Ave.  
Mobile, AZ 85239  
(602) 437-3165

**Forward Landfill**

9999 South Austin Road  
Manteca, CA 95336  
(209) 982-4298  
CAL000190080

**Allied Waste**

La Paz County  
Parker, Arizona 85344  
(928) 916-1253  
AZC950823111

**State Certified Analytical**

**Great Basin Laboratories**

855 Mill Street #2B  
Reno, NV 89502  
(775) 323-4822

**Veritas Laboratories**

8409 Desert Quail Drive  
Las Vegas, NV 89128  
(702) 521-1462

**TSDF'S and Organic Treatment**

**DeMenno/Kerdoon**

2000 N. Alameda Street  
Compton, CA 90222  
(310) 537-7100  
CAT080013352

**Incineration, Recycle, and Treatment**

**Veolia ES Technical Solutions LLC**

1704 First Street  
Azusa, CA 91702  
(626) 334-5117  
CAD008302903

**Light Tubes and Mercury**

**Veolia Environmental Services**

5736 W. Jefferson Street  
Phoenix, AZ 85043  
(602) 233-2955  
AZ00003373760

**Bio-Hazardous**

**Disposal Services**

Reno, NV  
(775) 329-8822

**Used Oil Recycling**

**Reno Drain Oil Environmental Services (RDO)**

11970 I-80 East  
Sparks, NV 89434  
(775) 342-0351

**Nevada Thermal Services, LLC**

2600 E. Mustang Rd.  
Sparks, NV 89434  
(775) 342-0607

**SRC Oil & Fuel, LLC**

1850 W. Broadway Rd. Ste. 116  
Phoenix, AZ 85041  
(602) 268-2600



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**COVERAGE AREAS & RESPONSE TIMES**

**Coverage Areas**

**Boise**

- Idaho
- Washington
- Oregon
- Montana
- Wyoming
- Northern Utah
- Northern Nevada

**Las Vegas**

- Nevada
- Southern Utah
- Southern California
- Northern Arizona

**Reno**

- Nevada
- Northern California
- Southern Oregon
- Southern Idaho

**Phoenix**

- Arizona
- Southern Nevada
- New Mexico
- Colorado
- Texas

**Response Times**

Due to the strategic location of our offices, we are able to quickly and efficiently respond to calls anywhere throughout the Western United States. Response times vary depending on the location and magnitude of the incident and what equipment would be required, however, our response teams are able to reach most locations within 4 hours or less. We are able to reach even the most remote locations within 12 hours.



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

### **SPILL RESPONSE CAPABILITIES**

- U.S. Coast Guard Oil Spill Response Organization rated for petroleum spills on swift water rivers and lakes.
- Petroleum fuels and DOT hazardous material chemical releases.
- Bulk releases or tanker roll-overs involving toxics, flammables and corrosives.
- Shifted loads, leaking drums, ruptured diesel fuel tanks and major truck crashes from highway carriers.
- Crime scene, illegal drug lab and infectious/biological substance removal.
- Mercury decontamination of residential and commercial sites.



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**LICENSES & PERMITS**

**U.S. EPA Identification No.**

Las Vegas – NVR000086496  
Reno – NVR000084541  
Arizona – AZR000508119

**U.S. DOT Identification No.**

052103 703 001LN (HAZMAT)  
774135 (US DOT)

**Highway Patrol No.**

Arizona - HMTL-14288  
California - CA-203158  
California - DTSC-4229  
Nevada - UPM-774135-NV

**Idaho Contractors License No.: RCE-22451**

General License

**Nevada Contractors License No.: 0052215**

General A22-Hazardous Waste  
12-Excavation, Grading, Trenching  
13-Wrecking Buildings  
15-Sewers, Drains, Pipes

**Arizona Contractors License Number: ROC220874**

General License

**California Contractors License No.: 809096**

General-A Engineering  
Hazardous Substance Removal

**Oregon Contractors License No.: 185653**

Residential Specialty Contractor  
Commercial Specialty Contractor – Level 1

**Utah Contractors License No.: 8196240-5501**

Contractor with LRF – S310



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*Industrial and Hazardous Waste Remediation - Transport - Disposal*

**Federal Tax ID #**

88-0370785

**Dunn & Bradstreet #**

02-651-5283

**NAICS Code**

562910

**CAGE Code**

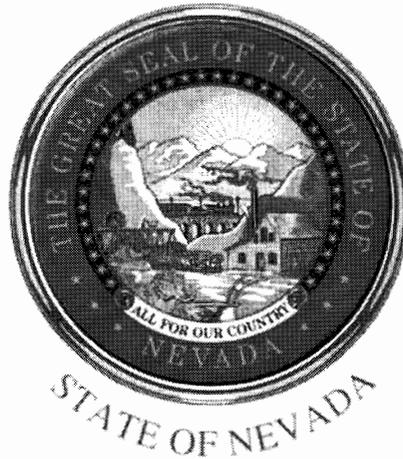
1Q9R1

**Insurance Coverage**

Commercial General	\$2,000,000
Automobile	\$1,000,000
Pollution Control	\$5,000,000
Umbrella	\$10,000,000
Workers Compensation	\$1,000,000



SECRETARY OF STATE



## NEVADA STATE BUSINESS LICENSE

**H2O ENVIRONMENTAL, INC.**  
Nevada Business Identification # NV19961214703

**Expiration Date: October 31, 2013**

In accordance with Title 7 of Nevada Revised Statutes, pursuant to proper application duly filed and payment of appropriate prescribed fees, the above named is hereby granted a Nevada State Business License for business activities conducted within the State of Nevada.

This license shall be considered valid until the expiration date listed above unless suspended or revoked in accordance with Title 7 of Nevada Revised Statutes.

IN WITNESS WHEREOF, I have hereunto  
set my hand and affixed the Great Seal of State,  
at my office on October 30, 2012



A handwritten signature in black ink, appearing to read "Ross Miller".

ROSS MILLER  
Secretary of State

This document is not transferable and is not issued in lieu of any locally-required business license, permit or registration.

*Please Post in a Conspicuous Location*

**You may verify this Nevada State Business License  
online at [www.nvsos.gov](http://www.nvsos.gov) under the Nevada Business Search.**

Bureau of Occupational Licenses  
Department of Self Governing Agencies  
The person named has met the requirements for registration and is  
entitled under the laws and rules of the State of Idaho to operate as a(n)

**REGISTERED ENTITY CONTRACTOR**

H2O ENVIRONMENTAL  
JOHN BRADLEY III  
6679 SOUTH SUPPLY WAY  
BOISE ID 83716

*Tana Cory*  
Tana Cory  
Chief, B.O.L.

RCE-22451  
Number

06/28/2014  
Expires

H2O ENVIRONMENTAL  
JOHN BRADLEY III  
6679 SOUTH SUPPLY WAY  
BOISE ID 83716

Your registration  
must be shown on  
demand.



carry this copy

display this copy



06/13/2013

Bureau of Occupational Licenses  
Department of Self Governing Agencies  
The person named has met the requirements for registration and is  
entitled under the laws and rules of the State of Idaho to operate as a(n)

**REGISTERED ENTITY CONTRACTOR**

H2O ENVIRONMENTAL  
JOHN BRADLEY III  
6679 SOUTH SUPPLY WAY  
BOISE ID 83716

*Tana Cory*  
Tana Cory  
Chief, B.O.L.

RCE-22451  
Number

06/28/2014  
Expires

Southern Nevada Office  
2310 Corporate Circle, Suite 200  
Henderson, Nevada 89074  
(702) 486-1100

Northern Nevada Office  
9670 Gateway Drive, Suite 100  
Reno, Nevada 89521  
(775) 688-1141

# STATE CONTRACTORS BOARD

The Nevada State Contractors Board certifies that

## H 2 O ENVIRONMENTAL INC

Licensed since August 01, 2001

License No. 0052215

Is duly licensed as a contractor in the following classification(s):

**PRINCIPALS:**

PATRICK THOMAS HEYNEMAN, President  
JOHN WILFRED BRADLEY, CEO Qualified

**A12-EXCAVATING GRADING TRENCHING &  
SURFACING; A13-WRECKING BUILDINGS; A15-SEWERS,  
DRAINS & PIPES; A22-UNCLASSIFIED; A22 IS  
DESIGNATED FOR HAZARDOUS WASTE REMOVAL  
ONLY**

LIMIT: \$350,000  
EXPIRES: 08/31/2014



Chairman, Nevada State Contractors Board



### STATE OF NEVADA CONTRACTORS LICENSE

THIS IS TO CERTIFY THAT THE COMPANY  
LISTED BELOW IS LICENSED IN THE STATE OF  
NEVADA FOR THE CLASSIFICATION(S) SHOWN:

H 2 O ENVIRONMENTAL INC  
6679 SOUTH SUPPLY WAY  
BOISE ID 83716

LIC. NO.  
0052215

EXPIRES:  
08/31/2014

LIMIT: \$350,000

Class: A12, A13, A15, A22 A22 IS DESIGNATED  
FOR HAZARDOUS WASTE REMOVAL ONLY

### STATE OF NEVADA STATE CONTRACTORS BOARD

9670 Gateway Drive, Suite 100 Reno, Nevada 89521  
2310 Corporate Circle, Suite 200 Henderson, Nevada 89074

### POCKET CARD RE-ORDER FORM

Enclosed is \$ \_\_\_\_\_ to cover the cost of \_\_\_\_\_ additional  
pocket cards at ten dollars (\$10.00) each.

Firm Name \_\_\_\_\_

License No. \_\_\_\_\_

Date: \_\_\_\_\_ By: \_\_\_\_\_

H 2 O ENVIRONMENTAL INC  
6679 SOUTH SUPPLY WAY  
BOISE ID 83716

# STATE OF ARIZONA

License No. ROC 220874

## Office of the Registrar of Contractors

*This is to certify that:*

H 2 O Environmental Inc

*Having been shown to possess all the necessary qualifications, and having complied with all the requirements of the law,  
is by order of the Registrar of Contractors duly licensed and admitted to engage in and pursue the business of*

K-5 RESIDENTIAL AND COMMERCIAL HAZARDOUS WASTE AND SOIL REMEDIATION

*Contractor in the State of Arizona. Given my hand and the seal of the Registrar of Contractors in my office, City of  
Phoenix, on 06/05/2006*



*William A. Mundell*

DIRECTOR, ARIZONA REGISTRAR OF CONTRACTORS



State Of California  
**CONTRACTORS STATE LICENSE BOARD**  
ACTIVE LICENSE



License Number **809096**

Entity **CORP**

Business Name **H 2 O ENVIRONMENTAL INC**

Classification(s) **A HAZ**

Expiration Date **06/30/2014**

[www.cslb.ca.gov](http://www.cslb.ca.gov)



**STATE OF OREGON**  
**CONSTRUCTION CONTRACTORS BOARD**  
**LICENSE CERTIFICATE**

**LICENSE NUMBER: 185653**

This document certifies that:

**H2O ENVIRONMENTAL INC**  
**6679 S SUPPLY WAY**  
**BOISE ID 83716**

is licensed in accordance with Oregon Law as a Residential Specialty Contractor and a Commercial Specialty Contractor Level 1.

**License Details:**

**EXPIRATION DATE: 04/07/2015**

**ENTITY TYPE: Corporation**

**INDEP. CONT. STATUS: NONEXEMPT**

**RESIDENTIAL BOND: \$15,000**

**COMMERCIAL BOND: \$50,000**

**INSURANCE: \$1,000,000 / \$2,000,000**

**RMI: JOHN W BRADLEY**

**HOME INSPECTOR CERTIFIED: NO**





**WASTE MANAGEMENT**

Lockwood Regional Landfill  
2401 Canyon Way  
Sparks, NV 89434  
(775) 342-0401  
(775) 342-2328 - Fax

February 18, 2014

Mr. William Rose  
GreenNu Commodities, LLC  
11000 US Hwy 50  
Hazen, NV 89408

Dear Mr. Rose:

Thanks you for your interest in pricing for the Lockwood Regional Landfill.

Based on your February 10, 2014 inquiry, Lockwood Landfill is currently permitted to accept the waste material that you identified.

Baled whole tires would be charged at the current gate rate for baled waste, which is \$35.75 per cubic yard, plus applicable fuel, environmental and RCR charges. Based on the description and analytical provided for "Carbon Black" industrial waste, the rate is \$19.95 per cubic yard plus profiling fee, fuel, environmental, RCR and other fees that may be associated with special handling requirements, as necessary.

Please keep in mind that the rates quoted herein are valid at the present time and are subject to annual price increases.

Please call me anytime at 775-343-7372 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Anderson'.

**Chris Anderson**  
District Manager

Lockwood Regional Landfill  
2401 Canyon Way  
Sparks, NV 89434

775-343-7372  
[cander14@wm.com](mailto:cander14@wm.com)



**Reno Office**  
815 Maestro Drive  
Reno, NV 89511

ph: 775.829.2245  
fax: 775.829.2213  
www.mcgin.com

**Las Vegas Office**  
6280 So. Valley View Blvd  
Suite 604  
Las Vegas, NV 89118

ph: 702.260.4961  
fax: 702.260.4968

May 29, 2014  
Revised Cost Estimate

GreeNu Commodities, LLC  
Attn: Larry Appel  
1050 South 21<sup>st</sup> Street  
Sparks, NV

**ATTN:** Larry Appel

**VIA EMAIL:** [Larry@AdvancedTekSystems.com](mailto:Larry@AdvancedTekSystems.com)

**RE: COST ESTIMATE TO COORDINATE AND OVERSEE DISPOSAL OF TIRES AND TIRE DERIVED MATERIALS, GREENU COMMODITIES LLC, 11000 US ALT HWY 50, FERNLEY, NV 89408**

Mr. Appel:

McGinley & Associates, Inc. (MGA) is pleased to submit this cost estimate to coordinate and oversee the disposal of all tires and tire derived materials that will be stored at GreeNu Commodities' proposed "tire to fuel" facility to be located near Fernley, Nevada. The location of the site is indicated in Figure 1.

## 1. SCOPE OF SERVICES

The scope of services in this cost estimate includes coordinating and overseeing the proper disposal of the following materials:

- Approximately 9,600 tons of tires (960,000 passenger tire equivalents) which will be stored in an outdoor yard in baled form.
- 470,000 cubic feet of carbon black which will be stored in two outdoor storage silos.
- 200,000 gallons of a tire derived fuel referred to as "pyro oil" which is similar diesel fuel in composition. The pyro oil will be stored in five underground storage tanks.
- Approximately 40 cubic yards of scrap steel which will be stored in a dumpster.
- A 250 gallon propane tank

Also included in this cost estimate is the coordination 24-hour onsite security of the subject facility for the duration of the disposal activities.

## 2. COST ESTIMATE

The estimated cost to perform the services outlined is \$25,000.

### 3. CLOSING

Should you have any questions regarding this cost estimate please contact me at (775) 829-2245.

Respectfully submitted,

**McGinley and Associates, Inc.**

A handwritten signature in blue ink, appearing to read 'Anthony Dimpel', is written over a light blue circular stamp. The signature is fluid and cursive.

Anthony Dimpel, E.I., C.E.M # 2353, Exp. 3/20/2015  
Project Manager

**McGINLEY & ASSOCIATES, INC.**  
**TERMS FOR PROFESSIONAL SERVICES**  
**PAGE 1**

**THE AGREEMENT:** Together, the McGinley & Associates Inc. (MGA) proposal dated May 29, 2014 and the elements herein will constitute the entire AGREEMENT, superseding any and all prior negotiations, correspondence, or agreements whether written or oral. Any changes to this AGREEMENT must be mutually agreed to in writing.

**STANDARD OF CARE:** CLIENT recognizes that subsurface conditions may vary from those observed at locations where borings, surveys, or explorations are made, and that site conditions may change with time. Data, interpretations, and recommendations by COMPANY will be based solely on information available to COMPANY. COMPANY is responsible for those data, interpretations, and recommendations, but will not be responsible for other parties' interpretations or use of the information developed.

Services performed by COMPANY under this AGREEMENT are expected by CLIENT to be conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession practicing contemporaneously under similar conditions in the locality of the project. Under no circumstances is any warranty, expressed or implied, made in connection with the providing of services.

**SITE ACCESS AND SITE CONDITIONS:** CLIENT will grant or obtain free access to the site for all equipment and personnel necessary for COMPANY to perform the work set forth in this AGREEMENT. CLIENT will notify any and all possessors of the project site that CLIENT has granted COMPANY free access to the site. COMPANY will take reasonable precautions to minimize damage to the site, but it is understood by CLIENT that, in the normal course of work, some damage may occur and the correction of such damage is not part of this AGREEMENT unless so specified in the PROPOSAL.

COMPANY will take reasonable precautions to avoid known subterranean structures and utilities, and CLIENT waives any claim against COMPANY, and agrees to defend, indemnify, and hold COMPANY harmless from any claim or liability for injury or loss, including costs of defense, arising from damage done to subterranean structures and utilities not identified or accurately located. In addition, CLIENT agrees to compensate COMPANY for any time spent or expenses incurred by COMPANY in defense of any such claim, with compensation to be based upon COMPANY's prevailing fee schedule and expense reimbursement policy.

**OBSERVATION:** If COMPANY is retained by CLIENT to provide a site representative for the purpose of observing specific portions of construction work or other field activities as set forth in the PROPOSAL, then this section applies.

For the specified assignment, COMPANY will report observations and professional opinions to CLIENT. No action of COMPANY or COMPANY's site representative can be construed as altering any AGREEMENT between CLIENT and others. COMPANY will report to CLIENT any observed site condition related to the work which, in COMPANY's professional opinion, does not conform with plans and specifications. The COMPANY has no right to reject or stop work of any agent of the CLIENT. Such rights are reserved solely for CLIENT. Furthermore, COMPANY's presence on site does not in any way guarantee the completion or quality of the performance of the work of any party retained by CLIENT to provide field or construction-related services.

COMPANY will not be responsible for any, will not have control or charge of specific means, methods, techniques, sequences or procedures of construction or other field activities selected by any agent of AGREEMENT of CLIENT, or safety precautions and programs incident thereto, unless otherwise specified by contract terms.

**BILLING AND PAYMENT:** Invoices will be submitted to CLIENT by COMPANY, and will be due and payable upon presentation. If CLIENT objects to all or any portion of any invoice, CLIENT will so notify COMPANY in writing within fourteen (14) calendar days of the invoice date, identify the cause of disagreement, and pay when due that portion of the invoice not in dispute. The parties will immediately make every effort to settle the disputed portion of the invoice. In the absence of written notification described above, the balance as stated on the invoice will be paid.

Invoices are delinquent if payment has not been received within sixty (60) days from date of invoice. CLIENT will pay an additional charge of one and one-half (1.5) percent per month (or the maximum percentage allowed by law, whichever is lower) on any delinquent amount, excepting any portion of the invoiced amount in dispute and resolved in favor of CLIENT. Payment thereafter will first be applied to accrued interest and then to the principal unpaid amount. All time spent and expenses incurred (including attorney's fees) in connection with collection of any delinquent amount will be paid by CLIENT to COMPANY per COMPANY's current fee schedules. In the event, CLIENT fails to pay COMPANY within sixty (60) days after invoices are rendered, CLIENT agrees that COMPANY will have the right to consider failure to pay COMPANY's invoice as a breach of this

**McGINLEY & ASSOCIATES, INC.**  
**TERMS FOR PROFESSIONAL SERVICES**  
**PAGE 2**

AGREEMENT.

**TERMINATION:** This AGREEMENT may be terminated by either party seven (7) days after written notice in the event of any breach of any provision of the AGREEMENT or in the event of substantial failure of performance by the other party, or if CLIENT suspends the work for more than three (3) months. In the even of termination, COMPANY will be paid for services performed prior to the date of termination plus reasonable termination expenses, including, but not limited to the cost of completing analyses, records, and reports necessary to document job status at the time of termination.

**RISK ALLOCATION:** Many risks potentially affect COMPANY by virtue of entering into this AGREEMENT to perform professional services on behalf of CLIENT. The principal risk is the potential for human error by COMPANY. For CLIENT to obtain the benefit of a fee which includes a nominal allowance for dealing with COMPANY's liability, CLIENT agrees to limit COMPANY's liability to CLIENT and to all other parties for claims arising out of COMPANY's performance of the services described in the AGREEMENT. The aggregate liability of COMPANY will not exceed \$50,000.00, or the cost of professional services, which ever is the lesser for negligent professional acts, errors, or omissions, and CLIENT agrees to indemnify and hold harmless COMPANY from and against all liabilities in excess of the monetary limit established above.

Limitations on liability and indemnities in this AGREEMENT are business understandings between the parties voluntarily and knowingly entered into, and shall apply to all theories of recovery including, but not limited to, breach of contract, warranty, tort (including negligence), strict of statutory liability, or any other cause of action, except for willful misconduct or gross negligence. The parties also agree that CLIENT will not seek damages in excess of the limitations indirectly through suits with other parties who may join COMPANY as a third-part defendant. Parties means CLIENT and COMPANY and their officers, employees, agents, affiliates, and subcontractors.

Both CLIENT and COMPANY agree that they will not be liable to each other, under any circumstances, for special, indirect, consequential, or punitive damages arising out of or related to this AGREEMENT.

**DISCOVERY OF UNANTICIPATED HAZARDOUS MATERIALS:** Hazardous materials may exist at a site where there is no reason to believe they could or should be present. COMPANY and CLIENT agree that the discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work or termination of services. COMPANY and CLIENT also agree that the discovery of unanticipated hazardous materials may make it necessary for COMPANY to take immediate measures to protect health and safety. CLIENT agrees to compensate COMPANY for any equipment decontamination or other costs incident to the discovery of unanticipated hazardous materials.

COMPANY agrees to notify CLIENT when unanticipated hazardous materials or suspected hazardous materials are encountered. CLIENT recognizes the existence of law and agrees to make any disclosures required by such law to the appropriate governing agencies. CLIENT also agrees to hold COMPANY harmless for any and all consequences of disclosures made by COMPANY which are required by governing law. In the event the project site is not owned by CLIENT, CLIENT recognized that it is CLIENT's responsibility to inform the property owner of the discovery of unanticipated hazardous materials or suspected hazardous materials.

Notwithstanding any other provision of the AGREEMENT, CLIENT waives any claim against COMPANY and, to the maximum extent permitted by law, agrees to defend, indemnify, and save COMPANY harmless from any claim, liability, and/or defense costs for injury or loss arising from COMPANY's discovery of unanticipated hazardous materials or suspected hazardous materials, including, but not limited to, any costs created by delay of the project, and any cost associated with the possible reduction of the property's value.

**DISPUTES RESOLUTION:** All claims, disputes, and other mattes in controversy between COMPANY and CLIENT arising out of or in any way related to this AGREEMENT will be submitted to "alternative dispute resolution" (ADR) before and as a condition precedent to other remedies provided by law. If and to the extent CLIENT and COMPANY have agreed on methods for resolving such disputes, then such methods will be set forth in the "Alternative Dispute Resolution Agreement" which, if attached, is incorporated into and made a part of this AGREEMENT. If no specific ADR procedure is set forth in this AGREEMENT, then it shall be understood that the parties shall submit disputes to mediation as a condition precedent to litigation.

If a dispute at law arises from matters related to the services provided under this AGREEMENT and that dispute requires

**McGINLEY & ASSOCIATES, INC.**  
**TERMS FOR PROFESSIONAL SERVICES**  
**PAGE 3**

litigation instead of ADR as provided above, then:

- (1) the claim will be brought and tried in judicial jurisdiction of the court of the county where COMPANY's place of business is located and CLIENT waives the right to remove the action to any other county or judicial jurisdiction , and
- (2) the prevailing party will be entitled to recovery of all reasonable costs incurred, including staff time, court costs, attorney's fees and other claim related expenses.

**GOVERNING LAW AND SURVIVAL:** The law of the State of Nevada will govern the validity of these TERMS, their interpretation and performance. If any of the provisions contained in this AGREEMENT are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions will not be impaired. Limitations of liability and indemnities will survive termination of this AGREEMENT for any cause.

The parties have read the foregoing, understand completely the TERMS, and willingly enter into this AGREEMENT which will become effective on the date signed below by Client.

\_\_\_\_\_  
CLIENT

McGINLEY & ASSOCIATES, INC.  
COMPANY

\_\_\_\_\_  
By

\_\_\_\_\_  
By

\_\_\_\_\_  
Position

Project Manager  
\_\_\_\_\_  
Position

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date



P.O. Box 13047  
Reno, NV 89507  
Office 775.786.1122  
Fax 775.786.2726  
PILB #700  
CA PPO Lic. #16693

## COVER SHEET

**Attention:** Tony Dimpel  
**Organization:** Greenu Commodities, LLC  
**From:** ESI Security Services  
**Subject:** **Greenu Facility On-Site Security**  
**Date:** May 30, 2014  
**Pages:** 2

Comments: Invoice #GFOS2014

Please review the following information and let us know if it meets your needs. If you agree with the following estimate please sign below and fax back to us 775-786-2726. We will begin scheduling your event after we receive confirmation from you. **The hours we accept faxed estimates are Monday through Friday, 8:30 A.M. to 4:30 P.M. for same day services. If you require immediate services after business hours, please call 775-626-3000 to set up services.**

Thank you

I approve the estimate and authorize ESI Security Services to provide security for my event:

\_\_\_\_\_  
Print

\_\_\_\_\_  
Sign

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

**\*\*\*PLEASE NOTE, WE WILL NOT SCHEDULE YOUR EVENT UNLESS WE RECEIVE THIS FAX RETURNED SIGNED\*\*\***



P.O. Box 13047  
Reno, NV 89507  
Office 775.786.1122  
Fax 775.786.2726  
PILB #700  
CA PPO Lic. #16693

May 30, 2014

**ESTIMATE**

#GFOS2014

Tony Dimpel  
Greenu Commodities, LLC  
1050 South 21st Street  
Sparks , NV 89431  
Phone:(775) 829-2245  
E-Mail: tdimpel@mcgin.com

The estimated daily cost of security for the Greenu Facility located at 11000 US ALT Hwy 50 in Fernley, Nevada is as follows:

**Shift One: On-Site Times 6AM-2PM**

5:00 A.M.- 3:00 P.M.	1 Security	\$18.00/hr	10 Hrs*	1 Day	\$	180.00
Marked Vehicle	1 Vehicle	\$65.00/car		1 Day	\$	65.00

**Shift Two: On-Site Times 2PM-10PM**

1:00 P.M.- 11:00 P.M.	1 Security	\$18.00/hr	10 Hrs*	1 Day	\$	180.00
Marked Vehicle	1 Vehicle	\$65.00/car		1 Day	\$	65.00

**Shift Three: On-Site Times 10PM-6AM**

9:00 P.M.- 7:00 A.M.	1 Security	\$18.00/hr	10 Hrs*	1 Day	\$	180.00
Marked Vehicle	1 Vehicle	\$65.00/car		1 Day	\$	65.00

**Total Estimate Daily Cost for Greenu Facility Security** \$ **735.00**

\*Total Hours Include (1) hour of travel time each way between Reno and Fernley.

This is the estimated cost of security for the Greenu Facility On-Site Security . Thank you for choosing ESI Security Services. Please call if you have any questions or require any additional information.

Sincerely,

Mike Hendi  
C.E.O.

# **ATTACHMENT 8**

**Tectonics Site and Grading Drawings and Drainage Report**

---

**BASIS OF BEARINGS**

THE BASIS OF BEARING IS THE NEVADA STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD83/94) OBTAINED BY GPS OBSERVATIONS AND THE CITY OF FERNLEY BASE STATION. A COMBINED SCALE FACTOR OF 1.00028896 WAS USED TO MODIFY THE NEVADA STATE PLANE GRID VALUES. ALL COORDINATES SHOWN HEREON ARE GROUND VALUES.

**BASIS OF ELEVATION**

THE BASIS OF ELEVATION FOR THIS SURVEY IS BASED ON A USGS MONUMENT AT THE SOUTHEAST CORNER OF THE SITE, HAVING A PUBLISHED ELEVATION OF 4130.64

**DETENTION POND 100 YEAR VOLUMES:**

100 YEAR VOLUME PROVIDED: 13,680 C.F.  
 100 YEAR VOLUME PROVIDED: 24,528 C.F.

**NOTES:**

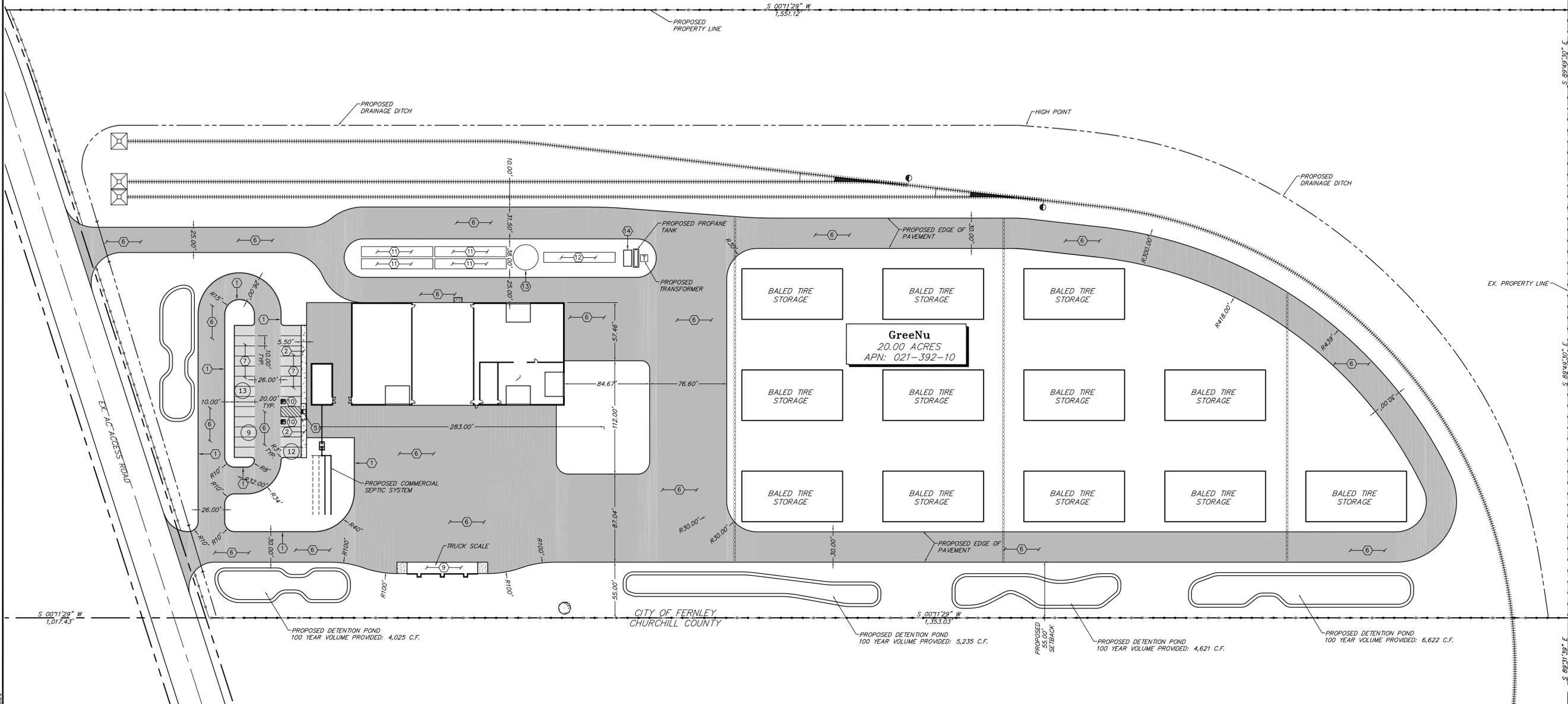
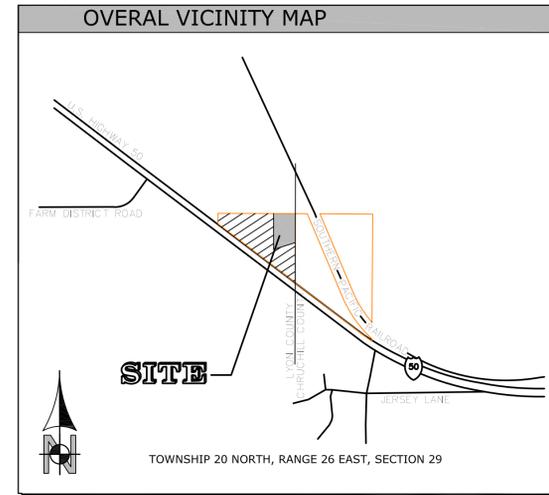
1. REFERENCE "GENERAL NOTES" ON SHEET C6.1
2. REFERENCE "ABBREVIATIONS" ON SHEET C6.1
3. REFERENCE "LEGEND" ON SHEET C6.1
4. ADD 4100 TO ALL FINISH GRADE OR INVERT ELEVATIONS.
5. PERMANENT STRIPING, BIKE LANES, AND MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
6. PARKING SPACE LINES SHALL BE 4-INCH WIDE, WHITE STRIPES.
7. HANDICAP PARKING SPACES SHALL BE MARKED WITH A PAINTED BLUE FIELD 48-INCHES SQUARE CONTAINING A PAINTED WHITE WHEELCHAIR SYMBOL.
8. HANDICAP PARKING AISLE LINES SHALL HAVE 4-INCH WIDE, WHITE STRIPES AT A 45 DEGREE ANGLE AND AT 24-INCHES ON CENTER.
9. PAINT CURB "RED" WITHIN 7.5' EACH SIDE OF ALL FIRE HYDRANTS.
10. PARKING STALL INSTALLATION AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE M.U.T.C.D. AND SECTION 330 OF THE "ORANGE BOOK."
11. ALL EXTERIOR CONCRETE EXPOSED TO FREEZING AND THAWING CONDITIONS SHOULD BE RATED AT 4,500 PSI MINIMUM
12. PARKING SPACE MARKING SHALL BE IN ACCORDANCE WITH FERNLEY DETAIL 02/P-40

**CONSTRUCTION NOTES:**

1. CONSTRUCT TYPE 1 R.C.C. MEDIAN CURB AS PER CITY OF FERNLEY DETAIL NUMBER 140.
2. CONSTRUCT SIDEWALK AS PER CITY OF FERNLEY DETAIL NUMBER 138.
3. CONSTRUCT STOP & STREET SIGN AS PER CITY OF FERNLEY DETAIL NUMBERS 155 & 156.
4. CONSTRUCT "STOP" SYMBOL MARKING AS PER CITY OF FERNLEY DETAIL NUMBER 157.
5. CONSTRUCT MIDBLOCK PEDESTRIAN RAMP AS PER DETAIL.
6. CONSTRUCT HEAVY ASPHALT SECTION OF 4" ASPHALTIC CONCRETE PAVEMENT, PG 64-28NV (TYPE 2) (DENSE-GRADED) 6.0% OVER 6" TYPE 2, CLASS B AGGREGATE BASE AS PER DETAIL.
7. CONSTRUCT LIGHT ASPHALT SECTION OF 3" ASPHALTIC CONCRETE PAVEMENT, PG 64-28NV (TYPE 2) (DENSE-GRADED) 6.0% OVER 6" TYPE 2, CLASS B AGGREGATE BASE AS PER DETAIL.
8. CONSTRUCT CONCRETE TRUCK DOCK APRON AS PER DETAIL.
9. CONSTRUCT TRUCK SCALE AS PER DETAIL.
10. CONSTRUCT HANDICAP PARKING AS PER DETAIL.
11. INSTALL DIESEL #2 TANKS UNDERGROUND, COORDINATE TANK DETAIL & FINAL LOCATION WITH OWNER.
12. INSTALL DIESEL #4 TANK UNDERGROUND, COORDINATE TANK DETAIL & FINAL LOCATION WITH OWNER.
13. INSTALL BLACK CARBON TANK, COORDINATE TANK DETAIL & LOCATION WITH OWNER.
14. PROPOSED GENERATOR PAD, COORDINATE PAD SIZE & LOCATION WITH OWNER.

**PROJECT LEGEND**

<b>OCCUPANCY</b>	
F1 (MANUFACTURING) / B (OFFICE)	TOTAL 20,000 S.F.
<b>CONSTRUCTION TYPES:</b> II-B	
<b>VEHICLE PARKING:</b>	
VAN ACCESSIBLE STALL PROVIDED=	2
PARKING STALLS PROVIDED=	12
TOTAL PARKING PROVIDED=	19
<b>LAND COVERAGE</b>	
BLDG AREA=	20,000 S.F. = 2.29% OF SITE
STORAGE AREA=	60,000 S.F. = 6.88% OF SITE
PAVED AREA=	146,859 S.F. = 16.85% OF SITE
LANDSCAPED AREA=	644,341 S.F. = 80.84% OF SITE
SITE AREA=	871,200 S.F.
ACREAGE: GROSS - 25.12± ACRES/NET - 16.73± ACRES	
A.P.N.: 021-392-10	
<b>SETBACKS:</b>	
FRONT:	0 FEET
SIDE:	0 FEET
BACK:	20 FEET



**SITE PLAN**

SCALE: 1" = 50'-0"



All drawings herein are the property of Tectonics Design Group and may not be reproduced or used in any capacity without the written authorization of Tectonics Design Group.  
 DRAWN: N.D.J.  
 DESIGNED: M.K.R.  
 CHECKED/STAMPED: MATT K. RASMUSSEN, P.E.  
 COPYRIGHT: TECTONICS DESIGN GROUP  
 STAMP: TECTONICS DESIGN GROUP  
 DESIGNER: TECTONICS DESIGN GROUP  
 PROJECT/CLIENT: GreenNu Site Design, Fernley, Nevada  
 #1: 13010  
 DATE: 6/3/14  
 SUBMITTAL RECORD: SUBMITTAL RECORD: 6/3/14  
 SHEET TITLE: GreenNu Site Design, Fernley, Nevada  
 SHEET: GreenNu Commodities LLC  
 Tacoma, Washington  
 TECTONICS DESIGN GROUP  
 10451 Double R Boulevard  
 Reno, NV 89521 www.tdg-inc.net  
 tel 775-824-9988  
 fax 775-824-9986  
 SUBMITTAL: SUBMITTAL NDEP PERMIT  
 SITE PLAN  
 C2.1



**DRAINAGE  
REPORT**

**FOR**

**GreeNu Commodities**

**CITY OF FERNLEY, NEVADA**

**APN**

**021-392-10**

*Prepared for:*

*GreeNu Commodities LLC  
917 Pacific Ave Suite 206  
Tacoma, WA 98402  
1-253-365-9333*

*Prepared by:*



**10451 Double R Blvd.  
Reno, Nevada 89521**

**June 4, 2014  
Job Number: 13010**



**6.4.14**

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### TABLES

TABLE 1.1	EXISTING BASIN VARIABLES
TABLE 2.1	EXISTING OFF-SITE BASIN PEAK DISCHARGES

### EXHIBITS

EX-1	VICINITY MAP
EX-2	EXISTING OFF-SITE DRAINAGE BASIN MAP
EX-3	EXISTING DRAINAGE BASIN MAP
EX-4	FEMA MAP
EX5	DEVELOPED SITE PLAN

### APPENDIX

A	HYDROLOGIC COMPUTATIONS
B	EXISTING BASIN CALCULATIONS
C	DEVELOPED ON-SITE BASIN CALCULATIONS
D	DETENTION BASIN DESIGN CALCULATIONS

## **INTRODUCTION**

### LOCATION OF PROPERTY

The GreeNu Commodities is a proposed development located on US Route 50, encompassing approximately 83.3 acres with APN 021-392-10, the remaining portion of the property is located within Churchill County and is not a part of this project. . The project is located in Section 29, Township 20 North, Range 26 East, Mount Diablo Meridian in Hazen, Lyon and Churchill Counties, Nevada. See Exhibit 1 for a general Vicinity Map.

### DESCRIPTION OF PROPERTY

The property is currently undeveloped with about 100 feet of fall from the northwest corner by US 50 to the west side of the parcel. The majority of this fall is within US 50 and the existing railroad spur running through the parcel. The ground surface is covered with sagebrush and weeds. Overhead utility lines exist along US 50 and through the center of the site to an existing mixing plant. Six storm drainage culvert pipes convey drainage across US 50, through the site running west to east along the natural drainage paths. There is an existing 12' x 12' box culvert along the railroad right of way which conveys drainage to the north side of the railroad, ultimately all drainage which flows through the site ends up crossing the railroad through this existing culvert. No previous drainage studies have been completed for the site.

### PROJECT DESCRIPTION

The proposed project is a new Clean Technology Commodity Production Facility which will house an approximately 20,000 sf. building, with an equipment footprint of approx. 6,000 sf. The facility will convert waste rubbers into three different commodities; Liquid Fuel, Carbon Black, and Steel. The facility will store the waste feedstock on site, in a baled form. This baled form of storage eliminates storage hazards typically associated with waste rubber storage. The equipment used for commodity production is a "real-time" conversion system, meaning the stored waste feedstock will be continually processed, eliminating the need for long term storage using the "first in, first out" production method. The plant will operate 24 hours a day, 6 days a week. The waste feedstock is prepped during the day and swing shift to eliminate the need for graveyard prep, which is the only process that contains noise (despite the fact that each process is enclosed within the building, and little to no noise escapes the building. The commodity production will be shipped via rail car, via the rail spur equipped on the site. Feedstock accumulation will also be received via rail car.

## **DRAINAGE BASIN DESCRIPTION**

### OFF-SITE DRAINAGE DESCRIPTION

The site is bound to the south and west by US 50, to north is an undeveloped parcel and to the east we are bound by the existing Union Pacific Rail Road (see vicinity map exhibit 1). There are six existing drainage culverts along US 50 which outlet onto the site, these six culverts represent the six off-site drainage basins to the southwest of US 50 and are bound

by the Canal (see exhibit 2 and 3 for basins). We have verified these existing flows in Table 2.1. These represent the flows which will be perpetuated through our site using a combination of roadside ditches and culverts and will ultimately end up crossing the railroad through the existing 12' x 12' box culvert. All existing drainage from the culverts which empty to our site will be perpetuated through our site. Please see exhibit 4 for all on-site drainage routing and flows. All off-site basin calculations can be found in Appendix B.

#### ON-SITE DRAINAGE DESCRIPTION

For the initial construction we will disturb only ~~23~~<sup>200</sup> acres for the GreeNu project. Due to the six existing drainage culverts which outlet onto our site, off-site drainage must be mitigated through our developed site. With our proposed development any of the existing drainage which will be disturbed will be perpetuated around our site with a drainage ditch around the new rail spur. These ditches will convey the NDOT drainage throughout the site and ultimately will convey the drainage back to the Railroad right-of-way and through existing box culvert under the Railroad. Drainage will also be conveyed through the site with the use of culverts and ultimately on-site detention basins.

#### FLOODPLAIN INFORMATION

The site is within two Flood Insurance Rate Maps, according to Flood Insurance Rate Map panel 320029-0075C, the site is located within Flood Zone X. Flood Zone X is defined as "Areas determined to be outside the 100 year flood plain". According to Flood Insurance Rate Map panel 320030-0625C, the site is located within Flood Zone C. Flood Zone C is defined as "Areas with minimal flooding"

#### SOIL CLASSIFICATION

The site has been mapped by the U.S. Geological Survey (USGS) as Quaternary-age alluvium deposits (Greene, et al., 1991). These sediments are described as: Undivided alluvial fan, pediment, flood plan, basin fill, playa, lacustrine, glacial, and Aeolian deposits. Includes extensive lacustrine and beach deposits of Pleistocene Lake Lahontan... Lakebed sediments form the surficial soil layer throughout most of the site. Lakebed sediments are composed of thinly to thickly bedded lean to fat clays typically containing greater than 95 percent medium to high plasticity fines with the balance fine sand.

#### **PROPOSED DRAINAGE FACILITIES**

#### COMPLIANCE WITH REGULATIONS AND ADOPTED PLANS

The design criteria which has been used for this drainage analysis is in compliance with City of Fernley Public Works Design and NDOT regulations.

## HYDROLOGIC CRITERIA

The following design criteria assumptions were used for this analysis:

- Design for on-site facilities is based upon the 100-year storm event.
- Rainfall intensity/duration frequencies were obtained from the City of Fernley IDF Curve.
- Hydrologic calculations were performed using the TR-55 software program distributed by Hasted Methods for all off site basins
- The rational method was used to determine on site peak flows for both the 25 and 100-year storm events.
- Per NDOT requirements SCS Method was used to for detention basin sizing.

## METHODOLOGY

The rational method was used to determine the peak flows for the proposed on-site basins. The parameters for this method are:

1. The drainage area (A, acres)
2. Time of Concentration ( $T_c$ , minutes)
3. Runoff Coefficient (C)
4. Rainfall Intensity (i, inches per hour)

The time of concentration is calculated based on the equation:

$$T_c = 10 \text{ min or } L / (V \times 60), \text{ whichever is greater,}$$

where

L = The travel distance in feet

V = Channel or overland velocity in feet per second

Due to the relatively small size of the site and sub areas and the high runoff potential within commercial developments, the minimum  $T_c$  of 10 minutes was used in this analysis.

Rainfall intensities are obtained from the rainfall intensity-duration-frequency curves for Fernley which are contained in the Public Works Design Manual. For  $T_c = 10$  min., the rainfall intensities are  $i_{25} = 2.45$  in/hr and  $i_{100} = 3.65$  in/hr.

From the Public Works Design Manual (See Appendix A), the following runoff coefficients were used:

Developed C = 0.90

Undeveloped C = 0.55

The peak runoff is calculated using the following equation:  $Q = CiA$

## **FACILITY DESIGN CALCULATIONS**

### ON-SITE DRAINAGE CALCULATIONS

Through the use of roadside ditches, ditches and culverts we will be able to perpetuate all existing and developed drainage through our site to the existing historic drainage ways. Exhibit 5 shows the routing and location of these ditches along with the on-site detention basin for the project. The calculations for the flows both existing and developed can be found in Appendix B, C & D.

### CONCLUSION

All designed storm drain and flood control facilities are effective in controlling both on-site and off-site storm runoff. The mitigation of the off-site drainage from the west side of US 50 and the on-site improvements are in compliance with the following:

- Drainage Laws – As designed, the drainage system shall promote and preserve the general health, welfare, and economic being of the region.
- City of Fernley – All items of concern such as reasonable use of and diversion of drainage have been addressed. No alteration of the drainage path occurs beyond the project boundaries.
- All storm drain improvements have been designed to meet or exceed the design standards as set forth in the Drainage Guidelines for City of Fernley and NDOT specifications.

**Table 1.1**  
**Existing Drainage Basin Variable's Used for Calculation of Runoff Hydrographs for WNRP**

<b>Basin No. <sup>(1)</sup></b>	<b>Drainage Area (Acres)</b>	<b>Time of Concentration (hr)</b>	<b>En Runoff CN Value</b>
1	6.39	0.16	92
2	41.5	0.2	82
3	9.2	0.16	83
4	21.68	0.18	83
5	78.5	0.21	81.5
6	85.1	0.24	78
7	128.96	0.31	78

<sup>(1)</sup> See Exhibit-2 for basin locations

**Table 2.1  
Summary of Peak Discharge for Existing Basins**

Basin No. <sup>(1)</sup>	Peak Discharge (cfs) <sup>(2)</sup>		
	10-Year	25-Year	100-Year
1	5	7	10
2	8	14	30
3	3	5	9
4	6	9	17
5	18	31	56
6	9	20	40
7	13	27	59

Basin No. <sup>(3)</sup>	Peak Discharge (cfs) <sup>(2)</sup>		
	10-Year	25-Year	100-Year
A	9	20	40
B	3	6	12
C	1	2	3
D	3	7	14
E	2	4	8

<sup>(1)</sup> See Exhibit-2 for basin locations

<sup>(2)</sup> Includes routing of hydrographs

<sup>(3)</sup> See Exhibit-3 for basin locations

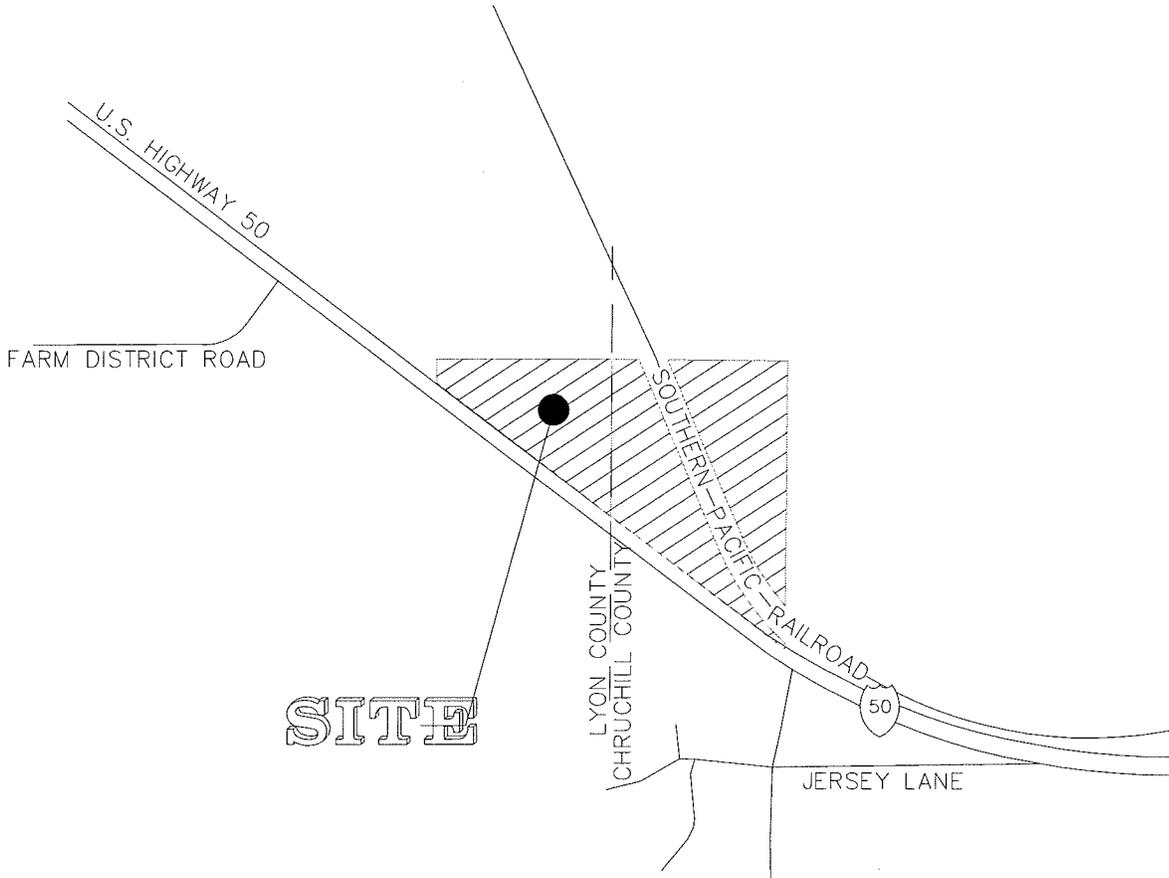
**EXHIBITS**

DRAWN: M.K.R.

DATE: 6-28-12

DESCRIPTION: VICINITY MAP

EXHIBIT 1



TOWNSHIP 20 NORTH, RANGE 26 EAST, SECTION 29

### VICINITY MAP

SCALE: N.T.S.



PROJECT/CLIENT:

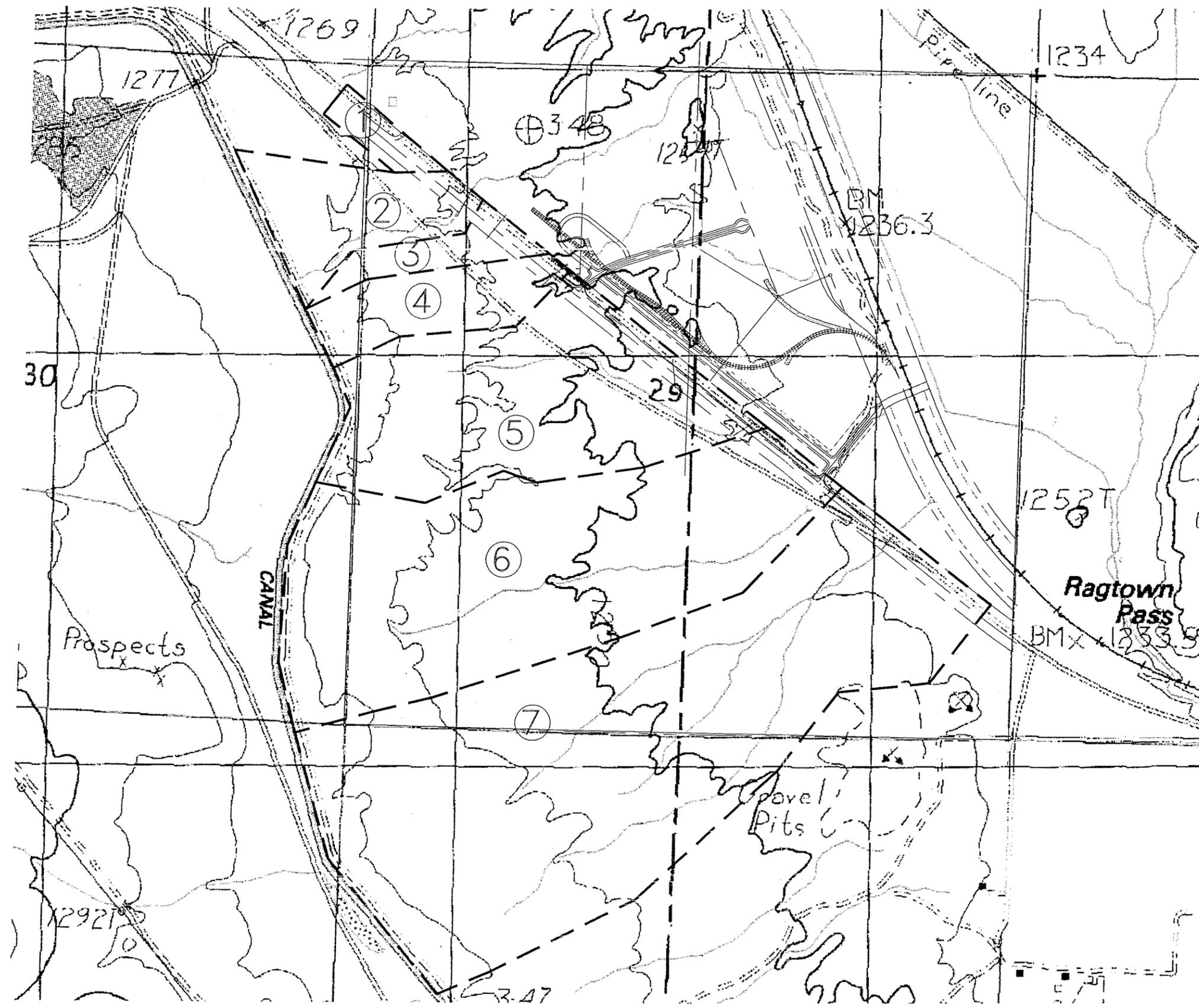
**WESTERN NEVADA RAIL PARK**  
 FERNLEY, NEVADA

JOB #: 12104

**TECTONICS**  
 Design Group

6880 South McCarran Blvd, Suite 11  
 Reno, NV 89509 www.tdg-inc.net

fax 775-824-9986  
 tel 775-824-9988



REFERENCE  
 TOPOGRAPHIC MAPPING PROVIDED BY LAND INFORM INTERNATIONAL.  
 SOURCE MAPPING SCALE 1:2400 USGS TOPOGRAPHIC QUADRANGLES.  
 USING NEVADA STATE PLANE QUADRANT NAD 83.  
 QUADRANGLE MAP: HAZEN

COPYRIGHT:  
 DRAWN: T.J.B.  
 DESIGNED: T.J.B.  
 CHECKED/STAMPED:  
 MATT K. RASMUSSEN, P.E.

STAMP:

**TECTONICS** DESIGN GROUP  
 6880 South McCarran Blvd, Suite 11  
 Reno, NV 89509 www.tectonicsdg.com  
 tel 775-824-9918  
 fax 775-824-9536

DESIGNER:

PROJECT/CLIENT:  
 # 07109  
**WESTERN NEVADA RAIL PARK**  
 HAZEN, NEVADA

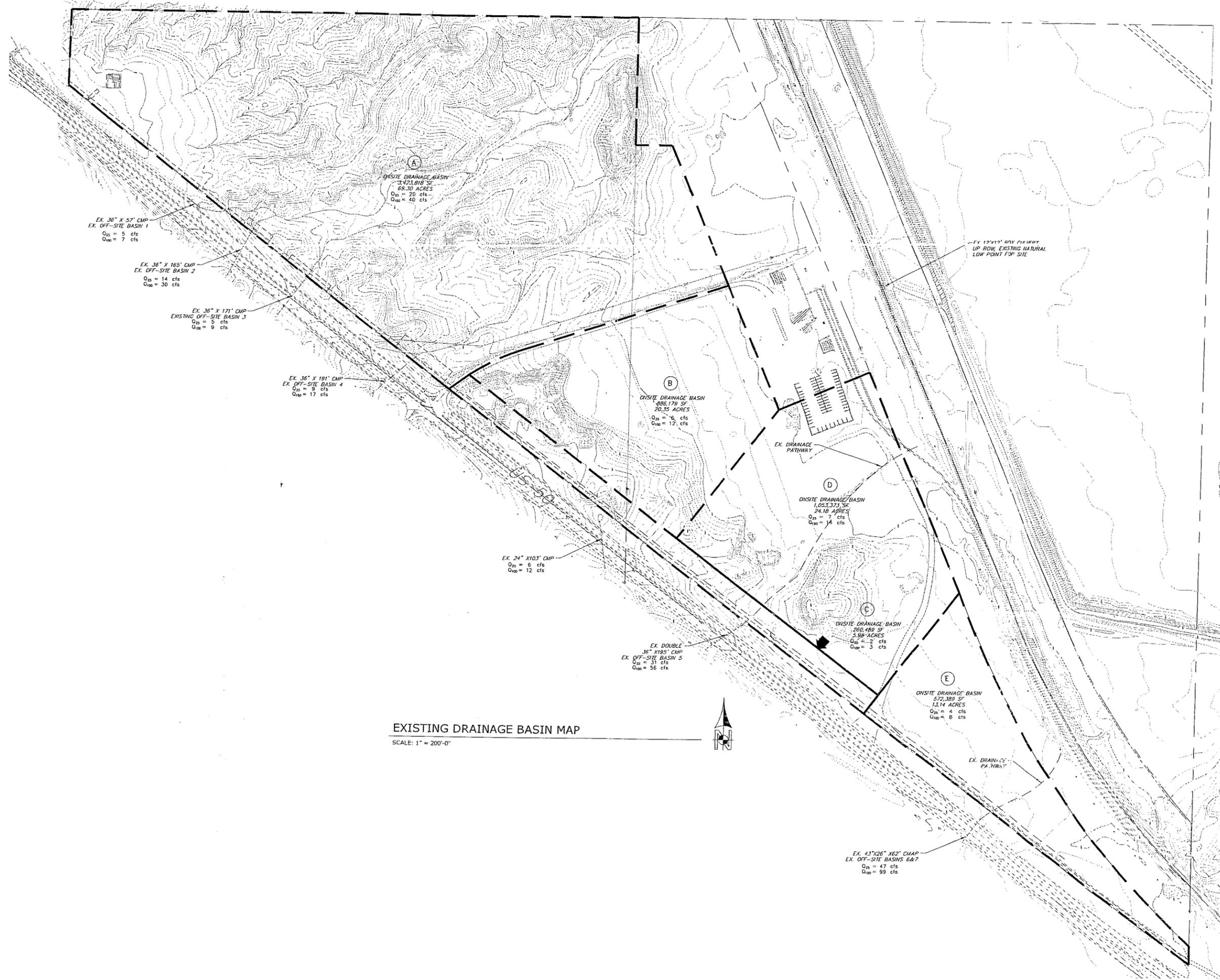
DATE: 2/11/08  
 SUBMITTAL FOR REVIEW

SUBMITTAL RECORD:  
 SHEET TITLE:  
 EXISTING OFF-SITE DRAINAGE BASIN MAP

EX-2

**LEGEND**  
 --- DRAINAGE BASIN BOUNDRY  
 (X) DRAINAGE BASIN NUMBER

NDOT EXHIBIT  
 SCALE: 1" = 400'-0"



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Drawn: T.J.B.  
Designed: T.J.B.  
Checked/Stamped: MATT K. RASMUSSEN, P.E.

Stamp: [Blank]

**TECTONICS DESIGN GROUP**  
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Reno, NV 89503 www.tectonicsgroup.com  
tel 775-824-9988  
fax 775-824-9986

Designer: [Blank]

Project/Client: # 07169  
**WESTERN NEVADA RAIL PARK MASS GRADING PLAN**  
HAZEN, NEVADA

Date: 5/19/08  
Submittal: FOR REVIEW

Submittal Record: [Blank]

Sheet Title: EXISTING DRAINAGE BASIN MAP

Sheet: EX.3

**BASIS OF BEARINGS**

THE BASIS OF BEARING IS THE NEVADA STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD83/94) OBTAINED BY GPS OBSERVATIONS AND THE CITY OF FERNLEY BASE STATION. A COMBINED SCALE FACTOR OF 1.000258886 WAS USED TO MODIFY THE NEVADA STATE PLANE GRID VALUES. ALL COORDINATES SHOWN HEREON ARE GROUND VALUES.

**BASIS OF ELEVATION**

THE BASIS OF ELEVATION FOR THIS SURVEY IS BASED ON A USGS MONUMENT AT THE SOUTHEAST CORNER OF THE SITE, HAVING A PUBLISHED ELEVATION OF 4130.64

**DETENTION POND 100 YEAR VOLUMES:**

100 YEAR VOLUME PROVIDED: 13,680 C.F.  
100 YEAR VOLUME PROVIDED: 24,320 C.F.

**NOTES:**

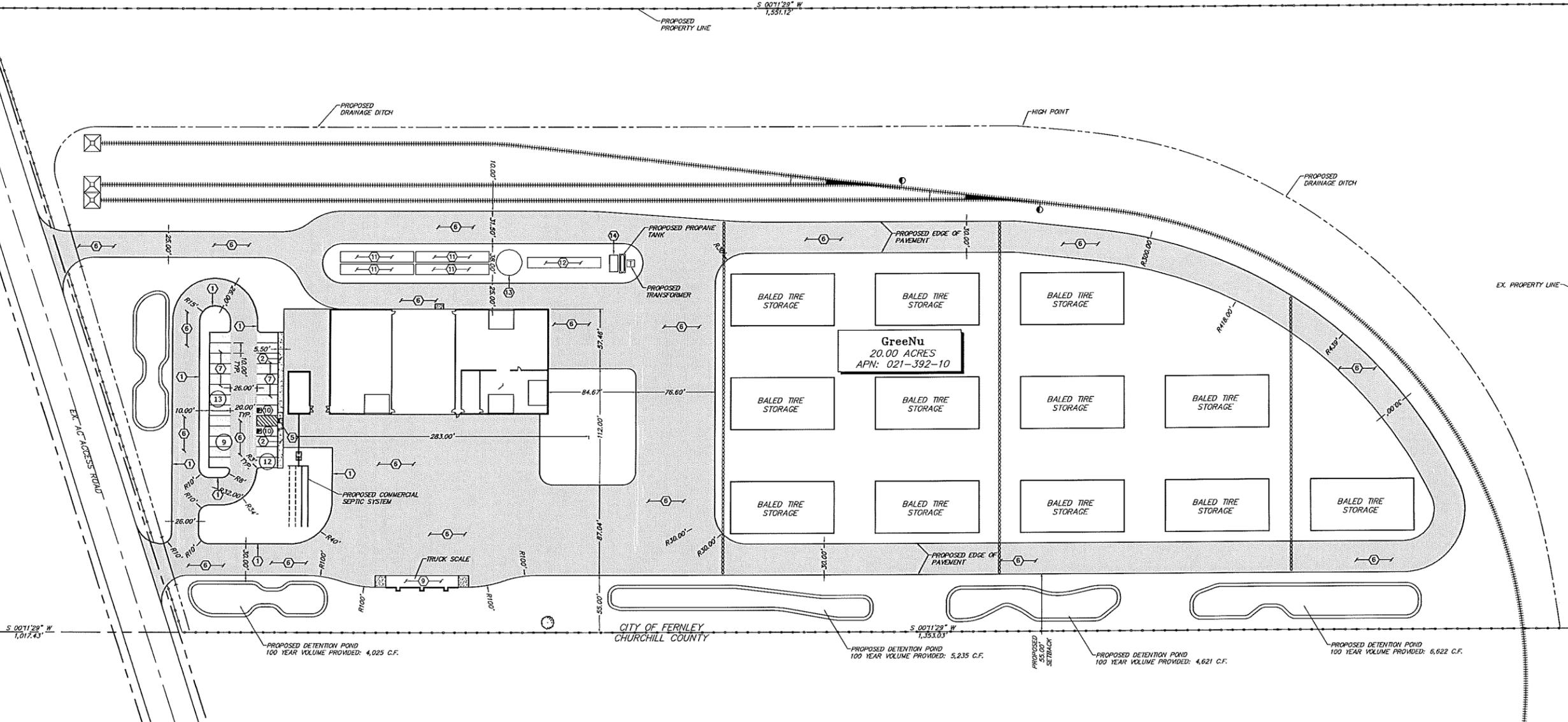
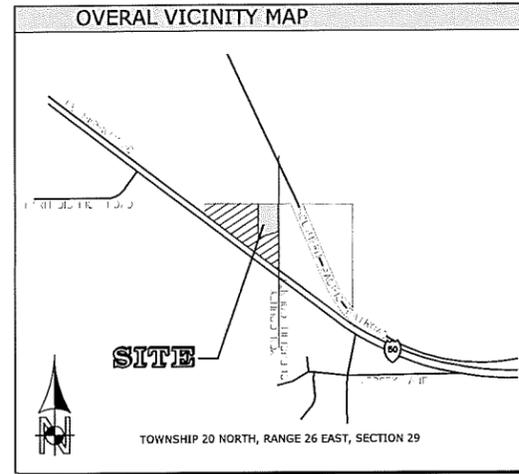
1. REFERENCE "GENERAL NOTES" ON SHEET C6.1
2. REFERENCE "ABBREVIATIONS" ON SHEET C6.1
3. REFERENCE "LEGEND" ON SHEET C6.1
4. ADD 4100 TO ALL FINISH GRADE OR INVERT ELEVATIONS.
5. PERMANENT STRIPING, BIKE LANES, AND MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
6. PARKING SPACE LINES SHALL BE 4-INCH WIDE, WHITE STRIPES.
7. HANDICAP PARKING SPACES SHALL BE MARKED WITH A PAINTED BLUE FIELD 48-INCHES SQUARE CONTAINING A PAINTED WHITE WHEELCHAIR SYMBOL.
8. HANDICAP PARKING AISLE LINES SHALL HAVE 4-INCH WIDE, WHITE STRIPES AT A 45 DEGREE ANGLE AND AT 24-INCHES ON CENTER.
9. PAINT CURB "RED" WITHIN 7.5' EACH SIDE OF ALL FIRE HYDRANTS.
10. PARKING STALL INSTALLATION AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE M.U.T.C.D. AND SECTION 330 OF THE "ORANGE BOOK".
11. ALL EXTERIOR CONCRETE EXPOSED TO FREEZING AND THAWING CONDITIONS SHOULD BE RATED AT 4,500 PSI MINIMUM.
12. PARKING SPACE MARKING SHALL BE IN ACCORDANCE WITH FERNLEY DETAIL 02/P-40

**CONSTRUCTION NOTES:**

1. CONSTRUCT TYPE I P.C.C. MEDIAN CURB AS PER CITY OF FERNLEY DETAIL NUMBER 140.
2. CONSTRUCT SIDEWALK AS PER CITY OF FERNLEY DETAIL NUMBER 136.
3. CONSTRUCT STOP & STREET SIGN AS PER CITY OF FERNLEY DETAIL NUMBERS 195 & 196.
4. CONSTRUCT "STOP" SYMBOL MARKING AS PER CITY OF FERNLEY DETAIL NUMBER 157.
5. CONSTRUCT MIDBLOCK PEDESTRIAN RAMP AS PER DETAIL.
6. CONSTRUCT HEAVY ASPHALT SECTION OF 4" ASPHALTIC CONCRETE PAVEMENT, PG 64-28BY (TYPE 2) (DENSE-GRADED) 6.0% OVER 6" TYPE 2, CLASS B AGGREGATE BASE AS PER DETAIL.
7. CONSTRUCT LIGHT ASPHALT SECTION OF 3" ASPHALTIC CONCRETE PAVEMENT, PG 64-28BY (TYPE 2) (DENSE-GRADED) 6.0% OVER 6" TYPE 2, CLASS B AGGREGATE BASE AS PER DETAIL.
8. CONSTRUCT CONCRETE TRUCK DOCK APRON AS PER DETAIL.
9. CONSTRUCT TRUCK SCALE AS PER DETAIL.
10. CONSTRUCT HANDICAP PARKING AS PER DETAIL.
11. INSTALL DIESEL #2 TANKS UNDERGROUND, COORDINATE TANK DETAIL & FINAL LOCATION WITH OWNER.
12. INSTALL DIESEL #4 TANK UNDERGROUND, COORDINATE TANK DETAIL & FINAL LOCATION WITH OWNER.
13. INSTALL BLACK CARBON TANK, COORDINATE TANK DETAIL & LOCATION WITH OWNER.
14. PROPOSED GENERATOR PAD, COORDINATE PAD SIZE & LOCATION WITH OWNER.

**PROJECT LEGEND**

<b>OCCUPANCY</b>	
F1 (MANUFACTURING) / B (OFFICE)	20,000 S.F.
TOTAL	
<b>CONSTRUCTION TYPES:</b> II-B	
<b>VEHICLE PARKING:</b>	
VAN ACCESSIBLE STALL PROVIDED=	2
PARKING STALLS PROVIDED=	17
TOTAL PARKING PROVIDED=	19
<b>LAND COVERAGE:</b>	
BUILD AREA=	20,000 S.F. = 2.29% OF SITE
STORAGE AREA=	60,000 S.F. = 6.85% OF SITE
PAVED AREA=	146,859 S.F. = 16.85% OF SITE
LANDSCAPED AREA=	644,341 S.F. = 80.84% OF SITE
SITE AREA=	871,200 S.F.
ACREAGE: GROSS - 25.12± ACRES/NET - 16.73± ACRES	
A.P.N.: 021-392-10	
SETBACKS:	
FRONT: 0 FEET	
SIDE: 0 FEET	
BACK: 20 FEET	



2 DAYS BEFORE YOU DIG CALL USA TOLL FREE 1-800-227-2800

**SITE PLAN**  
SCALE: 1" = 50'-0"

**PROJECT/CLIENT:** # 13010  
**DATE:** 6/3/14  
**SUBMITTAL RECORD:** SUBMITTAL NDEP PERMIT

**DESIGNER:** TECTONICS DESIGN GROUP  
10451 Double R Boulevard  
Reno, NV 89521 www.tdg-inc.net  
tel 775-824-9888  
fax 775-824-9886

**PROJECT/CLIENT:** GreeNu Site Design  
Femley, Nevada  
GreeNu Commodities LLC  
Tacoma, Washington

**SHEET TITLE:** SITE PLAN  
**SHEET:** C2.1

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**DRAWN:** N.D.J.  
**DESIGNED:** M.K.R.  
**CHECKED/STAMPED:** MATT K. RASMUSSEN, P.E.



APPROXIMATE SCALE IN FEET  
2000 0 2000

NATIONAL FLOOD INSURANCE PROGRAM

**FIRM**  
FLOOD INSURANCE RATE MAP

LYON COUNTY,  
NEVADA  
(UNINCORPORATED AREAS)

PANEL 75 OF 725  
(SEE MAP INDEX FOR PANELS NOT PRINTED)

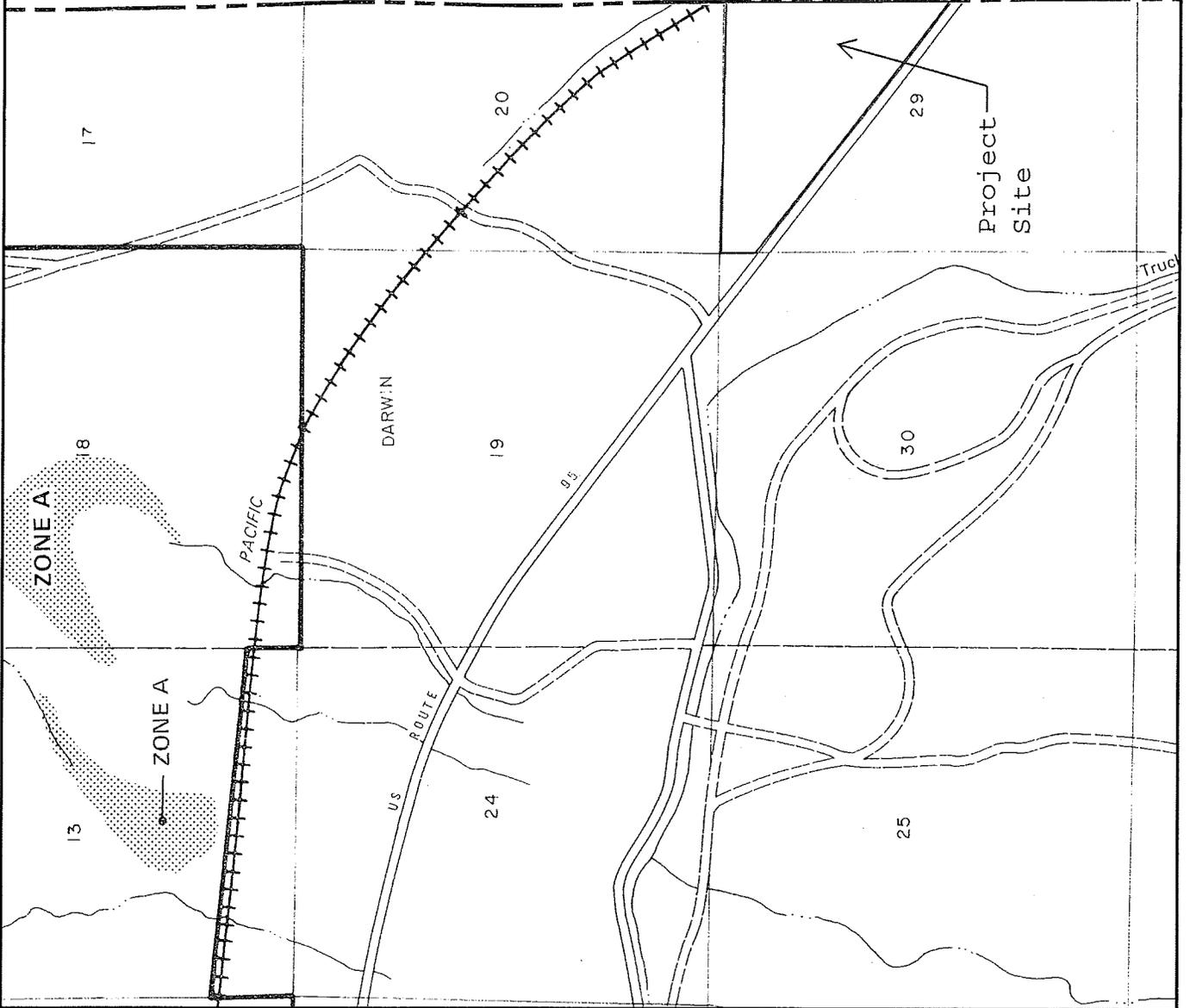
COMMUNITY-PANEL NUMBER  
320029 0075 C

MAP REVISED:  
NOVEMBER 20, 1998



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)



APPENDIX A

HYDROLOGIC COMPUTATIONS

**Table 1. Runoff Curve Numbers\***

Cover Type	Condition	Curve Numbers for Hydrologic Soil Group			
		A	B	C	D
Open Space (lawns, parks, golf courses, cemeteries)	Poor (grass cover < 50%)	68	79	86	89
	Fair (grass cover 50% to 75%)	49	69	79	84
	Good (grass cover > 75%)	39	61	74	80
Impervious Areas (paved areas, roofs, etc.)		98	98	98	98
Urban (Commercial)		89	92	94	95
Urban (Industrial)		81	88	91	93
Residential	1/4 acre lot	61	75	83	87
	1/2 acre lot	54	70	80	85
	1 acre lot	51	68	79	84
	2 acre lot	46	65	77	82
Fallow Land (farm land not actively cultivated)	Bare Soil	77	86	91	94
	Crop Residue Cover	74	83	88	90
Row Crops	Straight Row	67	78	85	89
	Contoured	70	79	84	88
Pasture (continuous grazing)		49	69	79	84
Meadow (protected from grazing, mowed for hay)		30	58	71	78
Brush		35	56	70	77
Woods/Grass Combination (orchard or tree farm)		43	65	76	82
Woods	Poor (heavy grazing or regular burning)	45	66	77	83
	Fair (grazed but not burned; some forest litter covers soil)	36	60	73	79
	Good (protected from grazing; litter and brush adequately cover soil)	30	55	70	77

**Soil Groups:**

1. Low runoff potential. Consist mainly of well-drained sands or gravels. High rate of water transmission.
2. Moderate infiltration rates. Moderately well-drained to well-drained soils. Moderately fine to moderately coarse textures. Moderate rate of water transmission.
3. Slow infiltration rates. Soils with moderately fine to fine texture. Slow rate of water transmission.
4. High runoff potential. Very slow infiltration rates. Consist mainly of clay soils, soils with a permanent high water table, soils with a clay layer at or near the surface and shallow soils over nearly impervious material. Very slow rate of water transmission.

\*Adapted from *Urban Hydrology for Small Watersheds. USDA Soil Conservation Service Technical Release 55, June 1986.*



**POINT PRECIPITATION  
FREQUENCY ESTIMATES  
FROM NOAA ATLAS 14**



**FALLON EXPERIMENT STN, NEVADA (26-2780) 39.4572 N 118.7811 W 3973 feet**

from "Precipitation-Frequency Atlas of the United States" NOAA Atlas 14, Volume 1, Version 4  
G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley  
NOAA, National Weather Service, Silver Spring, Maryland, 2006

Extracted: Tue Mar 11 2008

- Confidence Limits
- Seasonality
- Location Maps
- Other Info.
- GIS data
- Maps
- Help
- Docs
- U.S. Map

Precipitation Frequency Estimates (inches)																		
ARI* (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.09	0.14	0.17	0.23	0.28	0.35	0.40	0.50	0.58	0.65	0.70	0.76	0.84	0.91	1.09	1.23	1.43	1.61
2	0.11	0.17	0.21	0.28	0.35	0.45	0.51	0.63	0.75	0.84	0.90	0.97	1.07	1.17	1.40	1.58	1.85	2.07
5	0.15	0.23	0.29	0.39	0.48	0.58	0.66	0.81	0.97	1.09	1.19	1.28	1.40	1.54	1.84	2.08	2.42	2.74
10	0.19	0.29	0.36	0.48	0.60	0.70	0.78	0.96	1.15	1.30	1.41	1.51	1.65	1.82	2.16	2.43	2.84	3.21
25	0.25	0.38	0.47	0.63	0.78	0.88	0.96	1.17	1.39	1.58	1.71	1.83	1.99	2.19	2.58	2.89	3.39	3.82
50	0.30	0.46	0.57	0.76	0.95	1.04	1.11	1.33	1.57	1.80	1.95	2.07	2.25	2.47	2.89	3.24	3.78	4.28
100	0.36	0.55	0.68	0.92	1.14	1.21	1.28	1.51	1.77	2.04	2.19	2.33	2.51	2.77	3.21	3.59	4.18	4.72
200	0.43	0.66	0.82	1.10	1.36	1.42	1.48	1.72	1.97	2.27	2.44	2.59	2.78	3.06	3.51	3.92	4.57	5.16
500	0.55	0.83	1.03	1.39	1.72	1.75	1.80	2.02	2.26	2.60	2.78	2.94	3.12	3.44	3.91	4.36	5.05	5.72
1000	0.65	0.98	1.22	1.64	2.03	2.05	2.08	2.29	2.51	2.85	3.04	3.21	3.39	3.73	4.21	4.68	5.41	6.12

Text version of table

\* These precipitation frequency estimates are based on a partial duration series. ARI is the Average Recurrence Interval. Please refer to the documentation for more information. NOTE: Formatting forces estimates near zero to appear as zero.

* Upper bound of the 90% confidence interval Precipitation Frequency Estimates (inches)																		
ARI** (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.11	0.17	0.21	0.28	0.34	0.43	0.48	0.58	0.67	0.70	0.77	0.82	0.90	0.99	1.18	1.32	1.54	1.73
2	0.14	0.21	0.26	0.35	0.43	0.54	0.61	0.74	0.86	0.90	0.98	1.05	1.16	1.26	1.52	1.71	1.98	2.23
5	0.19	0.28	0.35	0.47	0.59	0.70	0.79	0.95	1.12	1.18	1.29	1.38	1.51	1.67	1.99	2.23	2.61	2.93
10	0.23	0.35	0.44	0.59	0.73	0.85	0.93	1.12	1.32	1.40	1.52	1.63	1.78	1.97	2.34	2.61	3.05	3.44
25	0.30	0.46	0.57	0.77	0.95	1.07	1.14	1.37	1.60	1.70	1.85	1.97	2.14	2.36	2.79	3.11	3.64	4.10
50	0.37	0.56	0.70	0.94	1.16	1.26	1.33	1.58	1.83	1.94	2.11	2.23	2.42	2.67	3.13	3.50	4.08	4.59
100	0.45	0.68	0.84	1.13	1.40	1.49	1.55	1.80	2.07	2.19	2.38	2.51	2.71	2.99	3.47	3.88	4.51	5.09
200	0.54	0.82	1.02	1.37	1.70	1.76	1.81	2.07	2.33	2.46	2.66	2.81	3.01	3.32	3.83	4.26	4.94	5.58
500	0.70	1.06	1.31	1.77	2.19	2.21	2.24	2.49	2.72	2.83	3.06	3.22	3.41	3.77	4.29	4.77	5.51	6.22
1000	0.84	1.27	1.58	2.12	2.63	2.64	2.66	2.87	3.06	3.13	3.38	3.54	3.73	4.12	4.65	5.14	5.91	6.72

\* The upper bound of the confidence interval at 90% confidence level is the value which 5% of the simulated quantile values for a given frequency are greater than.  
\*\* These precipitation frequency estimates are based on a partial duration series. ARI is the Average Recurrence Interval. Please refer to the documentation for more information. NOTE: Formatting prevents estimates near zero to appear as zero.

* Lower bound of the 90% confidence interval Precipitation Frequency Estimates (inches)																		
ARI** (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.07	0.11	0.14	0.19	0.23	0.30	0.34	0.43	0.51	0.60	0.65	0.70	0.78	0.85	1.01	1.15	1.33	1.51
2	0.09	0.14	0.18	0.24	0.29	0.38	0.44	0.54	0.65	0.77	0.83	0.91	1.00	1.08	1.30	1.48	1.73	1.94
5	0.13	0.19	0.24	0.32	0.40	0.49	0.56	0.69	0.84	1.01	1.10	1.19	1.30	1.43	1.71	1.94	2.27	2.56
10	0.16	0.24	0.29	0.40	0.49	0.58	0.66	0.81	0.99	1.20	1.29	1.39	1.53	1.68	2.00	2.27	2.65	3.00
25	0.20	0.30	0.37	0.50	0.62	0.72	0.80	0.98	1.19	1.45	1.57	1.68	1.84	2.00	2.37	2.67	3.15	3.55
50	0.23	0.35	0.44	0.59	0.73	0.82	0.90	1.10	1.33	1.63	1.77	1.89	2.06	2.26	2.64	2.98	3.49	3.96
100	0.27	0.41	0.51	0.69	0.86	0.94	1.02	1.22	1.47	1.83	1.98	2.11	2.29	2.50	2.90	3.27	3.83	4.35
200	0.31	0.48	0.59	0.80	0.99	1.07	1.15	1.36	1.61	2.02	2.17	2.32	2.51	2.75	3.16	3.56	4.17	4.72

**APPENDIX B**

**EXISTING BASIN  
CALCULATIONS**

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-11-2008 14:37:12  
Watershed file: --> C:\PONDPACK\WNRP-EX1.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 1

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 1	5	12.3
Composite Watershed	5	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 03-11-2008 14:37:12  
 Watershed file: --> C:\PONDPACK\WNRP-EX1.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 1

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 1	0	0	0	1	1	2	4	5	4
Total (cfs)	0	0	0	1	1	2	4	5	4

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 1	3	2	1	1	1	1	0	0	0
Total (cfs)	3	2	1	1	1	1	0	0	0

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 1	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 1	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-11-2008 14:37:12  
Watershed file: --> C:\PONDPACK\WNRP-EX1.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 1

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 1	7	12.3
Composite Watershed	7	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 03-11-2008 14:37:12  
 Watershed file: --> C:\PONDPACK\WNRP-EX1.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 1

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 1	0	0	0	1	2	3	6	7	5
Total (cfs)	0	0	0	1	2	3	6	7	5

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 1	3	2	2	1	1	1	1	1	0
Total (cfs)	3	2	2	1	1	1	1	1	0

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 1	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 1	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-11-2008 14:37:12  
Watershed file: --> C:\PONDPACK\WNRP-EX1.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 1

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 1	10	12.3
Composite Watershed	10	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 03-11-2008 14:37:12  
 Watershed file: --> C:\PONDPACK\WNRP-EX1.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 1

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 1	0	0	1	1	2	5	8	10	8
Total (cfs)	0	0	1	1	2	5	8	10	8

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 1	5	3	2	2	1	1	1	1	1
Total (cfs)	5	3	2	2	1	1	1	1	1

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 1	1	1	0	0	0	0	0	0	0
Total (cfs)	1	1	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 1	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 10-21-2008 09:58:05  
Watershed file: --> C:\PONDPACK\WNRP-EX2.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 2

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 2	8	12.3
Composite Watershed	8	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 10-21-2008 09:58:05  
Watershed file: --> C:\PONDPACK\WNRP-EX2.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 2

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 2	0	0	0	0	0	1	5	8	8
Total (cfs)	0	0	0	0	0	1	5	8	8

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 2	6	5	4	3	2	1	1	1	1
Total (cfs)	6	5	4	3	2	1	1	1	1

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 2	1	1	1	1	1	1	1	0	0
Total (cfs)	1	1	1	1	1	1	1	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 2	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 10-21-2008 09:58:05  
Watershed file: --> C:\PONDPACK\WNRP-EX2.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 2

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 2	14	12.4
Composite Watershed	14	12.4

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 10-21-2008 09:58:05  
 Watershed file: --> C:\PONDPACK\WNRP-EX2.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 2

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 2	0	0	0	0	1	2	7	12	14
Total (cfs)	0	0	0	0	1	2	7	12	14

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 2	11	8	6	5	3	2	2	2	2
Total (cfs)	11	8	6	5	3	2	2	2	2

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 2	1	1	1	1	1	1	1	1	1
Total (cfs)	1	1	1	1	1	1	1	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 2	1	1	0	0	0
Total (cfs)	1	1	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 10-21-2008 09:55:54  
Watershed file: --> C:\PONDPACK\WNRP-EX2.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 2

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 2	30	12.4
Composite Watershed	30	12.4

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 10-21-2008 09:55:54  
 Watershed file: --> C:\PONDPACK\WNRP-EX2.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 2

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 2	0	1	1	1	2	6	14	25	30
Total (cfs)	0	1	1	1	2	6	14	25	30

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 2	26	19	13	10	6	4	4	3	3
Total (cfs)	26	19	13	10	6	4	4	3	3

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 2	3	2	2	2	2	2	1	1	1
Total (cfs)	3	2	2	2	2	2	1	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 2	1	1	1	1	0
Total (cfs)	1	1	1	1	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 10-21-2008 10:09:12  
Watershed file: --> C:\PONDPACK\WNRP-EX3.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 3

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 3	3	12.3
Composite Watershed	3	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 10-21-2008 10:09:12  
Watershed file: --> C:\PONDPACK\WNRP-EX3.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 3

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 3	0	0	0	0	0	1	2	3	3
Total (cfs)	0	0	0	0	0	1	2	3	3

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 3	2	1	1	1	1	0	0	0	0
Total (cfs)	2	1	1	1	1	0	0	0	0

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 3	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 3	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 10-21-2008 10:09:12  
Watershed file: --> C:\PONDPACK\WNRP-EX3.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 3

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 3	5	12.3
Composite Watershed	5	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 10-21-2008 10:09:12  
 Watershed file: --> C:\PONDPACK\WNRP-EX3.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 3

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 3	0	0	0	0	1	2	4	5	4
Total (cfs)	0	0	0	0	1	2	4	5	4

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 3	3	2	1	1	1	1	1	0	0
Total (cfs)	3	2	1	1	1	1	1	0	0

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 3	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 3	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 10-21-2008 10:09:12  
Watershed file: --> C:\PONDPACK\WNRP-EX3.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 3

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 3	9	12.3
Composite Watershed	9	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)Executed: 10-21-2008 10:09:12  
Watershed file: --> C:\PONDPACK\WNRP-EX3.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYDWestern Nevada Rail Park  
Existing Basin Calculations  
Basin 3

## Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 3	0	0	0	1	2	3	7	9	7
Total (cfs)	0	0	0	1	2	3	7	9	7

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 3	5	3	2	2	1	1	1	1	1
Total (cfs)	5	3	2	2	1	1	1	1	1

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 3	1	1	0	0	0	0	0	0	0
Total (cfs)	1	1	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 3	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 08:53:01  
Watershed file: --> C:\PONDPACK\WNRP-EX4.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 4

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 4	6	12.4
Composite Watershed	6	12.4

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)Executed: 08-20-2008 08:53:01  
Watershed file: --> C:\PONDPACK\WNRP-EX4.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYDWestern Nevada Rail Park  
Existing Basin Calculations  
Basin 4

## Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 4	0	0	0	0	0	1	3	5	6
Total (cfs)	0	0	0	0	0	1	3	5	6

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 4	5	3	3	2	1	1	1	1	1
Total (cfs)	5	3	3	2	1	1	1	1	1

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 4	1	1	1	0	0	0	0	0	0
Total (cfs)	1	1	1	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 4	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 08:53:01  
Watershed file: --> C:\PONDPACK\WNRP-EX4.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 4

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 4	9	12.4
Composite Watershed	9	12.4

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)Executed: 08-20-2008 08:53:01  
Watershed file: --> C:\PONDPACK\WNRP-EX4.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYDWestern Nevada Rail Park  
Existing Basin Calculations  
Basin 4

## Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 4	0	0	0	0	1	2	5	8	9
Total (cfs)	0	0	0	0	1	2	5	8	9

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 4	8	6	4	3	2	2	1	1	1
Total (cfs)	8	6	4	3	2	2	1	1	1

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 4	1	1	1	1	1	1	1	0	0
Total (cfs)	1	1	1	1	1	1	1	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 4	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 08:53:01  
Watershed file: --> C:\PONDPACK\WNRP-EX4.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 4

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 4	17	12.4
Composite Watershed	17	12.4

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 08:53:01  
Watershed file: --> C:\PONDPACK\WNRP-EX4.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 4

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 4	0	0	0	1	1	3	8	14	17
Total (cfs)	0	0	0	1	1	3	8	14	17

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 4	14	11	7	5	3	2	2	2	2
Total (cfs)	14	11	7	5	3	2	2	2	2

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 4	1	1	1	1	1	1	1	1	1
Total (cfs)	1	1	1	1	1	1	1	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 4	1	1	0	0	0
Total (cfs)	1	1	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 09:05:50  
Watershed file: --> C:\PONDPACK\WNRP-EX5.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 5

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 5	18	12.4
Composite Watershed	18	12.4

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 08-20-2008 09:05:50  
 Watershed file: --> C:\PONDPACK\WNRP-EX5.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 5

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 5	0	0	0	0	1	3	10	17	18
Total (cfs)	0	0	0	0	1	3	10	17	18

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 5	14	11	8	6	4	3	3	3	2
Total (cfs)	14	11	8	6	4	3	3	3	2

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 5	2	2	2	2	1	1	1	1	1
Total (cfs)	2	2	2	2	1	1	1	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 5	1	1	1	1	0
Total (cfs)	1	1	1	1	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 09:05:50  
Watershed file: --> C:\PONDPACK\WNRP-EX5.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 5

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 5	31	12.4
Composite Watershed	31	12.4

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 09:05:50  
Watershed file: --> C:\PONDPACK\WNRP-EX5.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 5

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 5	0	0	0	1	2	6	17	28	31
Total (cfs)	0	0	0	1	2	6	17	28	31

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 5	25	19	14	10	7	5	4	4	4
Total (cfs)	25	19	14	10	7	5	4	4	4

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 5	3	3	3	2	2	2	2	2	2
Total (cfs)	3	3	3	2	2	2	2	2	2

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 5	1	1	1	1	0
Total (cfs)	1	1	1	1	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 09:05:50  
Watershed file: --> C:\PONDPACK\WNRP-EX5.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 5

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 5	56	12.4
Composite Watershed	56	12.4

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)Executed: 08-20-2008 09:05:50  
Watershed file: --> C:\PONDPACK\WNRP-EX5.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYDWestern Nevada Rail Park  
Existing Basin Calculations  
Basin 5

## Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 5	1	1	2	2	4	11	27	47	56
Total (cfs)	1	1	2	2	4	11	27	47	56

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 5	48	35	25	18	11	8	7	6	6
Total (cfs)	48	35	25	18	11	8	7	6	6

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 5	5	4	4	4	3	3	3	2	2
Total (cfs)	5	4	4	4	3	3	3	2	2

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 5	2	2	2	1	0
Total (cfs)	2	2	2	1	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 11:40:28  
Watershed file: --> C:\PONDPACK\WNRP-EX6.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 6

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 6	9	12.5
Composite Watershed	9	12.5

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 08-20-2008 11:40:28  
 Watershed file: --> C:\PONDPACK\WNRP-EX6.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 6

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 6	0	0	0	0	0	0	1	5	8
Total (cfs)	0	0	0	0	0	0	1	5	8

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 6	9	8	7	6	4	3	2	2	2
Total (cfs)	9	8	7	6	4	3	2	2	2

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 6	2	2	1	1	1	1	1	1	1
Total (cfs)	2	2	1	1	1	1	1	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 6	1	1	1	1	0
Total (cfs)	1	1	1	1	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 11:40:28  
Watershed file: --> C:\PONDPACK\WNRP-EX6.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 6

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 6	20	12.5
Composite Watershed	20	12.5

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 08-20-2008 11:40:28  
 Watershed file: --> C:\PONDPACK\WNRP-EX6.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 6

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 6	0	0	0	0	0	0	3	9	17
Total (cfs)	0	0	0	0	0	0	3	9	17

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 6	20	18	14	11	7	5	4	4	3
Total (cfs)	20	18	14	11	7	5	4	4	3

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 6	3	3	2	2	2	2	2	1	1
Total (cfs)	3	3	2	2	2	2	2	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 6	1	1	1	1	0
Total (cfs)	1	1	1	1	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 11:40:28  
Watershed file: --> C:\PONDPACK\WNRP-EX6.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 6

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 6	40	12.5
Composite Watershed	40	12.5

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 08-20-2008 11:40:28  
 Watershed file: --> C:\PONDPACK\WNRP-EX6.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 6

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 6	0	0	0	1	1	3	7	20	34
Total (cfs)	0	0	0	1	1	3	7	20	34

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 6	40	35	28	21	12	9	7	6	5
Total (cfs)	40	35	28	21	12	9	7	6	5

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 6	5	4	4	3	3	3	2	2	2
Total (cfs)	5	4	4	3	3	3	2	2	2

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 6	2	2	2	1	0
Total (cfs)	2	2	2	1	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 11:39:33  
Watershed file: --> C:\PONDPACK\WNRP-EX7.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 7

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 7	13	12.6
Composite Watershed	13	12.6

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 08-20-2008 11:39:33  
 Watershed file: --> C:\PONDPACK\WNRP-EX7.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 7

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 7	0	0	0	0	0	0	1	3	7
Total (cfs)	0	0	0	0	0	0	1	3	7

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 7	11	13	12	10	7	5	4	3	3
Total (cfs)	11	13	12	10	7	5	4	3	3

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 7	3	3	2	2	2	2	2	1	1
Total (cfs)	3	3	2	2	2	2	2	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 7	1	1	1	1	0
Total (cfs)	1	1	1	1	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 11:39:33  
Watershed file: --> C:\PONDPACK\WNRP-EX7.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 7

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 7	27	12.6
Composite Watershed	27	12.6

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 08-20-2008 11:39:33  
 Watershed file: --> C:\PONDPACK\WNRP-EX7.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 7

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 7	0	0	0	0	0	0	1	6	15
Total (cfs)	0	0	0	0	0	0	1	6	15

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 7	24	27	25	21	14	9	7	6	5
Total (cfs)	24	27	25	21	14	9	7	6	5

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 7	5	4	4	3	3	3	2	2	2
Total (cfs)	5	4	4	3	3	3	2	2	2

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 7	2	2	2	1	0
Total (cfs)	2	2	2	1	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 08-20-2008 11:39:33  
Watershed file: --> C:\PONDPACK\WNRP-EX7.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Existing Basin Calculations  
Basin 7

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin 7	53	12.6
Composite Watershed	53	12.6

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 08-20-2008 11:39:33  
 Watershed file: --> C:\PONDPACK\WNRP-EX7.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
 Existing Basin Calculations  
 Basin 7

-----  
 Composite Hydrograph Summary (cfs)  
 -----

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin 7	0	1	1	1	2	3	8	19	36
Total (cfs)	0	1	1	1	2	3	8	19	36

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin 7	49	53	48	39	24	16	12	10	8
Total (cfs)	49	53	48	39	24	16	12	10	8

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin 7	8	7	6	5	5	4	4	4	3
Total (cfs)	8	7	6	5	5	4	4	4	3

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin 7	3	3	2	2	0
Total (cfs)	3	3	2	2	0

Quick TR-55 Ver.5.46 S/N:  
Executed: 13:23:29 03-11-2008 c:\Pondpack\HAZEN.TCT

SUMMARY SHEET FOR Tc or Tt COMPUTATIONS  
(Solved for Time using TR-55 Methods)

WESTERN NEVADA RAIL PARK  
OFF SITE BASINS

Subarea descr.	Tc or Tt	Time (hrs)
BASIN 1	Tc	0.16
BASIN 2	Tc	0.20
BASIN 3	Tc	0.16
BASIN 4	Tc	0.18
BASIN 5	Tc	0.21
BASIN 6	Tc	0.24
BASIN 7	Tc	0.31

Quick TR-55 Ver.5.46 S/N:  
 Executed: 13:23:29 03-11-2008 c:\Pondpack\HAZEN.TCT

WESTERN NEVADA RAIL PARK  
 OFF SITE BASINS

Tc COMPUTATIONS FOR: BASIN 1

SHEET FLOW (Applicable to Tc only)

Segment ID		SHEET	
Surface description		NATURAL	
Manning's roughness coeff., n		0.0130	
Flow length, L (total < or = 300)	ft	300.0	
Two-yr 24-hr rainfall, P2	in	2.000	
Land slope, s	ft/ft	0.0180	
	0.8		
	.007 * (n*L)		
T =	-----	hrs	0.07 = 0.07
	0.5 0.4		
	P2 * s		

SHALLOW CONCENTRATED FLOW

Segment ID		SHALLOW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	700.0	
Watercourse slope, s	ft/ft	0.0180	
	0.5		
Avg.V =	Csf * (s)	ft/s	2.1647
where:	Unpaved Csf = 16.1345		
	Paved Csf = 20.3282		
T = L / (3600*V)		hrs	0.09 = 0.09

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
	2/3 1/2		
V =	1.49 * r * s	ft/s	0.0000
	n		
Flow length, L	ft	0	
T = L / (3600*V)		hrs	0.00 = 0.00

.....  
 TOTAL TIME (hrs) 0.16

Quick TR-55 Ver.5.46 S/N:  
 Executed: 13:23:29 03-11-2008 c:\Pondpack\HAZEN.TCT

WESTERN NEVADA RAIL PARK  
 OFF SITE BASINS

Tc COMPUTATIONS FOR: BASIN 2

SHEET FLOW (Applicable to Tc only)

Segment ID		SHEET	
Surface description		NATURAL	
Manning's roughness coeff., n		0.0130	
Flow length, L (total < or = 300)	ft	300.0	
Two-yr 24-hr rainfall, P2	in	2.000	
Land slope, s	ft/ft	0.0350	
	0.8		
	.007 * (n*L)		
T =	-----	hrs	0.06 = 0.06
	0.5 0.4		
	P2 * s		

SHALLOW CONCENTRATED FLOW

Segment ID		SHALLOW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	1570.0	
Watercourse slope, s	ft/ft	0.0350	
	0.5		
Avg.V =	Csf * (s)	ft/s	3.0185
where:	Unpaved Csf = 16.1345		
	Paved Csf = 20.3282		
T = L / (3600*V)		hrs	0.14 = 0.14

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
	2/3 1/2		
V =	1.49 * r * s	ft/s	0.0000
	n		
Flow length, L	ft	0	
T = L / (3600*V)		hrs	0.00 = 0.00

.....  
 TOTAL TIME (hrs) 0.20

Quick TR-55 Ver.5.46 S/N:  
 Executed: 13:23:29 03-11-2008 c:\Pondpack\HAZEN.TCT

WESTERN NEVADA RAIL PARK  
 OFF SITE BASINS

Tc COMPUTATIONS FOR: BASIN 3

SHEET FLOW (Applicable to Tc only)

Segment ID		SHEET	
Surface description		NATURAL	
Manning's roughness coeff., n		0.0130	
Flow length, L (total < or = 300)	ft	300.0	
Two-yr 24-hr rainfall, P2	in	2.000	
Land slope, s	ft/ft	0.0410	
		0.8	
		.007 * (n*L)	
T =		-----	hrs 0.05 = 0.05
		0.5 0.4	
		P2 * s	

SHALLOW CONCENTRATED FLOW

Segment ID		SHALLOW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	1300.0	
Watercourse slope, s	ft/ft	0.0410	
		0.5	
Avg.V = Csf * (s)	ft/s	3.2670	
where:		Unpaved Csf = 16.1345	
		Paved Csf = 20.3282	
T = L / (3600*V)	hrs	0.11	= 0.11

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
		2/3 1/2	
		1.49 * r * s	
V =		-----	ft/s 0.0000
		n	
Flow length, L	ft	0	
T = L / (3600*V)	hrs	0.00	= 0.00

.....  
 TOTAL TIME (hrs) 0.16

Quick TR-55 Ver.5.46 S/N:  
 Executed: 13:23:29 03-11-2008 c:\Pondpack\HAZEN.TCT

WESTERN NEVADA RAIL PARK  
 OFF SITE BASINS

Tc COMPUTATIONS FOR: BASIN 4

SHEET FLOW (Applicable to Tc only)

Segment ID		SHEET	
Surface description		NATURAL	
Manning's roughness coeff., n		0.0130	
Flow length, L (total < or = 300)	ft	300.0	
Two-yr 24-hr rainfall, P2	in	2.000	
Land slope, s	ft/ft	0.0440	
	0.8		
	.007 * (n*L)		
T =	-----	hrs	0.05 = 0.05
	0.5 0.4		
	P2 * s		

SHALLOW CONCENTRATED FLOW

Segment ID		SHALLOW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	1560.0	
Watercourse slope, s	ft/ft	0.0440	
	0.5		
Avg.V = Csf * (s)	ft/s	3.3844	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.13	= 0.13

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
	2/3 1/2		
V =	1.49 * r * s	ft/s	0.0000
	n		
Flow length, L	ft	0	
T = L / (3600*V)	hrs	0.00	= 0.00

.....  
 TOTAL TIME (hrs) 0.18

Quick TR-55 Ver.5.46 S/N:  
 Executed: 13:23:29 03-11-2008 c:\Pondpack\HAZEN.TCT

WESTERN NEVADA RAIL PARK  
 OFF SITE BASINS

Tc COMPUTATIONS FOR: BASIN 5

SHEET FLOW (Applicable to Tc only)

Segment ID		SHEET	
Surface description		NATURAL	
Manning's roughness coeff., n		0.0130	
Flow length, L (total < or = 300)	ft	300.0	
Two-yr 24-hr rainfall, P2	in	2.000	
Land slope, s	ft/ft	0.0325	
	0.8		
	.007 * (n*L)		
T =	-----	hrs	0.06 = 0.06
	0.5 0.4		
	P2 * s		

SHALLOW CONCENTRATED FLOW

Segment ID		SHALLOW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	1100.0	
Watercourse slope, s	ft/ft	0.0325	
	0.5		
Avg.V = Csf * (s)	ft/s	2.9087	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.11	= 0.11

CHANNEL FLOW

Segment ID		CHANNEL	
Cross Sectional Flow Area, a	sq.ft	4.00	
Wetted perimeter, Pw	ft	6.00	
Hydraulic radius, r = a/Pw	ft	0.667	
Channel slope, s	ft/ft	0.0325	
Manning's roughness coeff., n		0.0130	
	2/3 1/2		
V =	1.49 * r * s	ft/s	15.7685
	-----		
	n		
Flow length, L	ft	2400	
T = L / (3600*V)	hrs	0.04	= 0.04

.....  
 TOTAL TIME (hrs) 0.21

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WESTERN NEVADA RAIL PARK  
 OFF SITE BASINS

Tc COMPUTATIONS FOR: BASIN 6

SHEET FLOW (Applicable to Tc only)

Segment ID		SHEET	
Surface description		NATURAL	
Manning's roughness coeff., n		0.0130	
Flow length, L (total < or = 300)	ft	300.0	
Two-yr 24-hr rainfall, P2	in	2.000	
Land slope, s	ft/ft	0.0220	
	0.8		
	.007 * (n*L)		
T =	-----	hrs	0.07 = 0.07
	0.5 0.4		
	P2 * s		

SHALLOW CONCENTRATED FLOW

Segment ID		SHALLOW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	800.0	
Watercourse slope, s	ft/ft	0.0220	
	0.5		
Avg.V = Csf * (s)	ft/s	2.3931	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.09	= 0.09

CHANNEL FLOW

Segment ID		CHANNEL	
Cross Sectional Flow Area, a	sq.ft	4.00	
Wetted perimeter, Pw	ft	6.00	
Hydraulic radius, r = a/Pw	ft	0.667	
Channel slope, s	ft/ft	0.0220	
Manning's roughness coeff., n		0.0130	
	1.49 * r <sup>2/3</sup> * s <sup>1/2</sup>		
V =	-----	ft/s	12.9736
	n		
Flow length, L	ft	3700	
T = L / (3600*V)	hrs	0.08	= 0.08

.....  
 TOTAL TIME (hrs) 0.24

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 Executed: 13:23:29 03-11-2008 c:\Pondpack\HAZEN.TCT

WESTERN NEVADA RAIL PARK  
 OFF SITE BASINS

Tc COMPUTATIONS FOR: BASIN 7

SHEET FLOW (Applicable to Tc only)

Segment ID		SHEET	
Surface description		NATURAL	
Manning's roughness coeff., n		0.0130	
Flow length, L (total < or = 300)	ft	300.0	
Two-yr 24-hr rainfall, P2	in	2.000	
Land slope, s	ft/ft	0.0180	
		0.8	
		.007 * (n*L)	
T =		hrs	0.07 = 0.07
		0.5	0.4
	P2	*	s

SHALLOW CONCENTRATED FLOW

Segment ID		SHALLOW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	500.0	
Watercourse slope, s	ft/ft	0.0180	
		0.5	
Avg.V = Csf * (s)	ft/s	2.1647	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.06	= 0.06

CHANNEL FLOW

Segment ID		CHANNEL	
Cross Sectional Flow Area, a	sq.ft	2.00	
Wetted perimeter, Pw	ft	6.00	
Hydraulic radius, r = a/Pw	ft	0.333	
Channel slope, s	ft/ft	0.0180	
Manning's roughness coeff., n		0.0130	
		2/3	1/2
V =		ft/s	7.3926
		n	
Flow length, L	ft	4600	
T = L / (3600*V)	hrs	0.17	= 0.17

.....  
 TOTAL TIME (hrs) 0.31

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:07:20  
Watershed file: --> C:\PONDPACK\WNRP-ONA.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin A

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin A	9	12.3
Composite Watershed	9	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:07:20  
Watershed file: --> C:\PONDPACK\WNRP-ONA.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin A

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin A	0	0	0	0	0	2	7	9	8
Total (cfs)	0	0	0	0	0	2	7	9	8

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin A	6	4	3	3	2	2	2	2	1
Total (cfs)	6	4	3	3	2	2	2	2	1

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin A	1	1	1	1	1	1	1	1	1
Total (cfs)	1	1	1	1	1	1	1	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin A	1	1	1	0	0
Total (cfs)	1	1	1	0	0

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Return Frequency: 25 years

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 03-14-2008 13:07:20  
 Watershed file: --> C:\PONDPACK\WNRP-ONA.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Developed Basin Calculations  
 Basin A

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin A	20	12.3
Composite Watershed	20	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 03-14-2008 13:07:20  
 Watershed file: --> C:\PONDPACK\WNRP-ONA.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Developed Basin Calculations  
 Basin A

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin A	0	0	0	0	1	4	14	20	17
Total (cfs)	0	0	0	0	1	4	14	20	17

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin A	12	9	7	5	4	3	3	3	2
Total (cfs)	12	9	7	5	4	3	3	3	2

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin A	2	2	2	2	2	1	1	1	1
Total (cfs)	2	2	2	2	2	1	1	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin A	1	1	1	1	0
Total (cfs)	1	1	1	1	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:07:20  
Watershed file: --> C:\PONDPACK\WNRP-ONA.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin A

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin A	40	12.3
Composite Watershed	40	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:07:20  
Watershed file: --> C:\PONDPACK\WNRP-ONA.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin A

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin A	0	0	0	1	4	11	28	40	34
Total (cfs)	0	0	0	1	4	11	28	40	34

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin A	23	16	12	9	7	5	5	4	4
Total (cfs)	23	16	12	9	7	5	5	4	4

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin A	4	3	3	3	2	2	2	2	2
Total (cfs)	4	3	3	3	2	2	2	2	2

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin A	2	1	1	1	0
Total (cfs)	2	1	1	1	0

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10 years

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:13  
Watershed file: --> C:\PONDPACK\WNRP-ONB.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin B

>>> Summary of Subarea Times to Peak <<<<

at	Peak Discharge at	Time to Peak
Outfall	Composite Outfall	Composite
	(cfs)	(hrs)
----- Subarea -----	-----	-----
Basin B	3	12.3
-----	-----	-----
Composite Watershed	3	12.3

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10 years

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:13  
Watershed file: --> C:\PONDPACK\WNRP-ONB.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin B

-----  
 Composite Hydrograph Summary (cfs)  
 -----

Subarea	11.0	11.3	11.6	11.9	12.0	12.1	12.2
12.3 12.4 Description hr hr	hr	hr	hr	hr	hr	hr	hr

Basin B	0	0	0	0	0	1	2
3 2							

Total (cfs)	0	0	0	0	0	1	2
3 2							

Subarea	12.5	12.6	12.7	12.8	13.0	13.2	13.4
13.6 13.8 Description hr hr	hr	hr	hr	hr	hr	hr	hr

Basin B	2	1	1	1	1	1	1
0 0							

Total (cfs)	2	1	1	1	1	1	1
0 0							

Subarea	14.0	14.3	14.6	15.0	15.5	16.0	16.5
17.0 17.5 Description hr hr	hr	hr	hr	hr	hr	hr	hr

Basin B	0	0	0	0	0	0	0
0 0							

Total (cfs)	0	0	0	0	0	0	0
0 0							

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin B	0	0	0	0	0
Total (cfs)	0	0	0	0	0

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Return Frequency:

25 years

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:13  
Watershed file: --> C:\PONDPACK\WNRP-ONB.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin B

>>>> Summary of Subarea Times to Peak <<<<

at Outfall	Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak Composite (hrs)
	Basin B	6	12.3
	Composite Watershed	6	12.3

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Return Frequency:

25 years

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:13  
Watershed file: --> C:\PONDPACK\WNRP-ONB.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin B

Composite Hydrograph Summary (cfs)

Subarea		11.0	11.3	11.6	11.9	12.0	12.1	12.2
12.3	12.4							
Description	Description	hr						
hr	hr							
Basin B		0	0	0	0	0	1	4
6	5							
Total (cfs)		0	0	0	0	0	1	4
6	5							

Subarea		12.5	12.6	12.7	12.8	13.0	13.2	13.4
13.6	13.8							
Description	Description	hr						
hr	hr							
Basin B		4	3	2	2	1	1	1
1	1							
Total (cfs)		4	3	2	2	1	1	1
1	1							

Subarea	14.0	14.3	14.6	15.0	15.5	16.0	16.5
17.0 17.5							
Description	hr						
Basin B	1	1	1	0	0	0	0
0 0							
Total (cfs)	1	1	1	0	0	0	0
0 0							

Subarea	18.0	19.0	20.0	22.0	26.0
Description	hr	hr	hr	hr	hr
Basin B	0	0	0	0	0
Total (cfs)	0	0	0	0	0

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100 years

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:13  
Watershed file: --> C:\PONDPACK\WNRP-ONB.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin B

>>>> Summary of Subarea Times to Peak <<<<

Peak Discharge at Time to Peak

at

Outfall	Subarea	Composite Outfall (cfs)	Composite (hrs)
	Basin B	12	12.3
	Composite Watershed	12	12.3

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100 years

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:13  
Watershed file: --> C:\PONDPACK\WNRP-ONB.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin B

Composite Hydrograph Summary (cfs)

Subarea	11.0	11.3	11.6	11.9	12.0	12.1	12.2
Description	hr						
Basin B	0	0	0	0	1	3	8
Total (cfs)	0	0	0	0	1	3	8

Subarea	12.3	12.4	12.5	12.6	12.7	12.8	13.0	13.2	13.4
---------	------	------	------	------	------	------	------	------	------

13.6	13.8							
Description		hr						
hr	hr							
Basin B		7	5	3	3	2	2	1
1	1							
Total (cfs)		7	5	3	3	2	2	1
1	1							

17.0	17.5	14.0	14.3	14.6	15.0	15.5	16.0	16.5
Description		hr						
hr	hr							
Basin B		1	1	1	1	1	1	1
1	1							
Total (cfs)		1	1	1	1	1	1	1
1	1							

	18.0	19.0	20.0	22.0	26.0
Description	hr	hr	hr	hr	hr
Basin B	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:30  
Watershed file: --> C:\PONDPACK\WNRP-ONC.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin C

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin C	1	12.2
Composite Watershed	1	12.2

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:30  
Watershed file: --> C:\PONDPACK\WNRP-ONC.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin C

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin C	0	0	0	0	0	0	1	1	1
Total (cfs)	0	0	0	0	0	0	1	1	1

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin C	1	0	0	0	0	0	0	0	0
Total (cfs)	1	0	0	0	0	0	0	0	0

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin C	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin C	0	0	0	0	0
Total (cfs)	0	0	0	0	0

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Return Frequency: 25 years

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:30  
Watershed file: --> C:\PONDPACK\WNRP-ONC.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin C

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin C	2	12.3
Composite Watershed	2	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 03-14-2008 13:10:30  
 Watershed file: --> C:\PONDPACK\WNRP-ONC.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Developed Basin Calculations  
 Basin C

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin C	0	0	0	0	0	0	1	2	2
Total (cfs)	0	0	0	0	0	0	1	2	2

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin C	1	1	1	0	0	0	0	0	0
Total (cfs)	1	1	1	0	0	0	0	0	0

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin C	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin C	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:30  
Watershed file: --> C:\PONDPACK\WNRP-ONC.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin C

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin C	3	12.3
Composite Watershed	3	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:30  
Watershed file: --> C:\PONDPACK\WNRP-ONC.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin C

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin C	0	0	0	0	0	1	2	3	3
Total (cfs)	0	0	0	0	0	1	2	3	3

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin C	2	1	1	1	1	0	0	0	0
Total (cfs)	2	1	1	1	1	0	0	0	0

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin C	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin C	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 14:39:05  
Watershed file: --> C:\PONDPACK\WNRP-OND.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin D

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin D	3	12.3
Composite Watershed	3	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 14:39:05  
Watershed file: --> C:\PONDPACK\WNRP-OND.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin D

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin D	0	0	0	0	0	1	2	3	3
Total (cfs)	0	0	0	0	0	1	2	3	3

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin D	2	2	1	1	1	1	1	1	1
Total (cfs)	2	2	1	1	1	1	1	1	1

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin D	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin D	0	0	0	0	0
Total (cfs)	0	0	0	0	0

Quick TR-55 Version: 5.46 S/N:

Page 3

Return Frequency: 25 years

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 03-14-2008 14:39:05

Watershed file: --> C:\PONDPACK\WNRP-OND.MOP

Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Developed Basin Calculations  
 Basin D

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin D	7	12.3
Composite Watershed	7	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 03-14-2008 14:39:05  
 Watershed file: --> C:\PONDPACK\WNRP-OND.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Developed Basin Calculations  
 Basin D

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin D	0	0	0	0	0	1	5	7	6
Total (cfs)	0	0	0	0	0	1	5	7	6

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin D	4	3	2	2	1	1	1	1	1
Total (cfs)	4	3	2	2	1	1	1	1	1

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin D	1	1	1	1	1	0	0	0	0
Total (cfs)	1	1	1	1	1	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin D	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 14:39:05  
Watershed file: --> C:\PONDPACK\WNRP-OND.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin D

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin D	14	12.3
Composite Watershed	14	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 14:39:05  
Watershed file: --> C:\PONDPACK\WNRP-OND.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin D

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin D	0	0	0	0	1	4	10	14	12
Total (cfs)	0	0	0	0	1	4	10	14	12

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin D	8	6	4	3	2	2	2	2	1
Total (cfs)	8	6	4	3	2	2	2	2	1

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin D	1	1	1	1	1	1	1	1	1
Total (cfs)	1	1	1	1	1	1	1	1	1

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin D	1	1	0	0	0
Total (cfs)	1	1	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 14:39:26  
Watershed file: --> C:\PONDPACK\WNRP-ONE.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin E

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin E	2	12.3
Composite Watershed	2	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 14:39:26  
Watershed file: --> C:\PONDPACK\WNRP-ONE.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin E

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin E	0	0	0	0	0	0	1	2	2
Total (cfs)	0	0	0	0	0	0	1	2	2

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin E	1	1	1	1	0	0	0	0	0
Total (cfs)	1	1	1	1	0	0	0	0	0

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin E	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin E	0	0	0	0	0
Total (cfs)	0	0	0	0	0

Quick TR-55 Version: 5.46 S/N:

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Return Frequency: 25 years

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 03-14-2008 14:39:26

Watershed file: --> C:\PONDPACK\WNRP-ONE.MOP

Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Developed Basin Calculations  
 Basin E

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin E	4	12.3
Composite Watershed	4	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)Executed: 03-14-2008 14:39:26  
Watershed file: --> C:\PONDPACK\WNRP-ONE.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-25.HYDWestern Nevada Rail Park  
Developed Basin Calculations  
Basin E

## Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin E	0	0	0	0	0	1	3	4	3
Total (cfs)	0	0	0	0	0	1	3	4	3

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin E	2	2	1	1	1	1	1	0	0
Total (cfs)	2	2	1	1	1	1	1	0	0

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin E	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin E	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 14:39:26  
Watershed file: --> C:\PONDPACK\WNRP-ONE.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin E

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin E	8	12.3
Composite Watershed	8	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 14:39:26  
Watershed file: --> C:\PONDPACK\WNRP-ONE.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-100.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin E

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin E	0	0	0	0	1	2	5	8	7
Total (cfs)	0	0	0	0	1	2	5	8	7

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin E	4	3	2	2	1	1	1	1	1
Total (cfs)	4	3	2	2	1	1	1	1	1

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin E	1	1	1	1	0	0	0	0	0
Total (cfs)	1	1	1	1	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin E	0	0	0	0	0
Total (cfs)	0	0	0	0	0

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:13  
Watershed file: --> C:\PONDPACK\WNRP-ONB.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin B

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin B	3	12.3
Composite Watershed	3	12.3

TR-55 TABULAR HYDROGRAPH METHOD  
Type II. Distribution  
(24 hr. Duration Storm)

Executed: 03-14-2008 13:10:13  
Watershed file: --> C:\PONDPACK\WNRP-ONB.MOP  
Hydrograph file: --> C:\PONDPACK\PRE-10.HYD

Western Nevada Rail Park  
Developed Basin Calculations  
Basin B

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
Basin B	0	0	0	0	0	1	2	3	2
Total (cfs)	0	0	0	0	0	1	2	3	2

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
Basin B	2	1	1	1	1	1	1	0	0
Total (cfs)	2	1	1	1	1	1	1	0	0

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
Basin B	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
Basin B	0	0	0	0	0
Total (cfs)	0	0	0	0	0

Quick TR-55 Version: 5.46 S/N:

Page 3

Return Frequency: 25 years

TR-55 TABULAR HYDROGRAPH METHOD  
 Type II. Distribution  
 (24 hr. Duration Storm)

Executed: 03-14-2008 13:10:13  
 Watershed file: --> C:\PONDPACK\WNRP-ONB.MOP  
 Hydrograph file: --> C:\PONDPACK\PRE-25.HYD

Western Nevada Rail Park  
 Developed Basin Calculations  
 Basin B

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
Basin B	6	12.3
Composite Watershed	6	12.3

Quick TR-55 Ver.5.46 S/N:  
 Executed: 10:08:38 06-03-2014

GREENU COMMODITIES  
 EXISTING DRAINAGE BASIN

\* \* \* \* \* SUMMARY OF RATIONAL METHOD PEAK DISCHARGES \* \* \* \* \*

$$Q = \text{adj} * C * I * A$$

Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres  
 adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years  
 'C' adjustment, k = 1  
 Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELOPED	0.550	20.00						
			10.00	0.550	0.550	2.190	20.00	24.09

Quick TR-55 Ver.5.46 S/N:  
 Executed: 10:08:38 06-03-2014

GREENU COMMODITIES  
 EXISTING DRAINAGE BASIN

\* \* \* \* \* SUMMARY OF RATIONAL METHOD PEAK DISCHARGES \* \* \* \* \*

$$Q = \text{adj} * C * I * A$$

Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres  
 adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years  
 'C' adjustment, k = 1  
 Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELOPED	0.550	20.00						
			10.00	0.550	0.550	3.800	20.00	41.80

**APPENDIX C**

**DEVELOPED ON-SITE BASIN  
CALCULATIONS**

Quick TR-55 Ver.5.46 S/N:  
 Executed: 10:07:01 06-03-2014

GREENU COMMODITIES  
 OVERALL DEVELOPED DRAINAGE BASIN

\* \* \* \* \* SUMMARY OF RATIONAL METHOD PEAK DISCHARGES \* \* \* \* \*

$$Q = \text{adj} * C * I * A$$

Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres  
 adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years  
 'C' adjustment, k = 1  
 Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELOPED	0.850	20.00						
			10.00	0.850	0.850	2.190	20.00	37.23

Quick TR-55 Ver.5.46 S/N:  
 Executed: 10:07:01 06-03-2014

GREENU COMMODITIES  
 OVERALL DEVELOPED DRAINAGE BASIN

\* \* \* \* \* SUMMARY OF RATIONAL METHOD PEAK DISCHARGES \* \* \* \* \*

$$Q = \text{adj} * C * I * A$$

Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres  
 adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years  
 'C' adjustment, k = 1  
 Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELOPED	0.850	20.00						
			10.00	0.850	0.850	3.800	20.00	64.60

**APPENDIX D**

**DETENTION BASIN  
DESIGN CALCULATIONS**



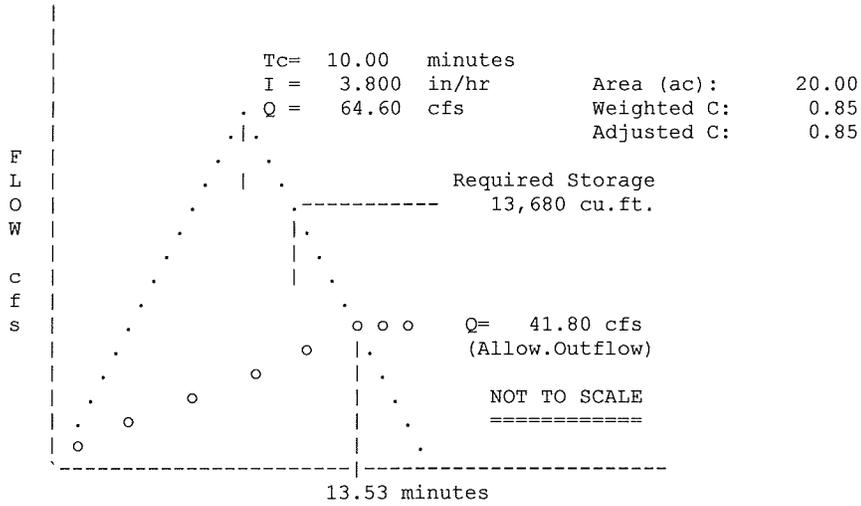
Quick TR-55 Ver.5.46 S/N:  
 Executed: 10:09:13 06-03-2014

MODIFIED RATIONAL METHOD  
 ---- Graphical Summary for Maximum Required Storage ----

GREENU COMMODITIES  
 DEVELOPED DRAINAGE BASIN

```

*****
*                                     |                                     *
* RETURN FREQUENCY: 100 yr          | Allowable Outflow: 41.80 cfs *
* 'C' Adjustment: 1.000            | Required Storage: 13,680 cu.ft. *
*                                     |                                     *
* STORM DURATION = Tc for Max.Storage |                                     *
*-----*
* Peak Inflow: 64.60 cfs            | Inflow .HYD stored: NONE STORED *
*****
  
```



Quick TR-55 Ver.5.46 S/N:  
Executed: 10:09:13 06-03-2014

GREENU COMMODITIES  
DEVELOPED DRAINAGE BASIN

\*\*\*\* Modified Rational Hydrograph \*\*\*\*  
Weighted C = 0.850 Area= 20.000 acres Tc = 10.00 minutes  
Adjusted C = 0.850 Td= 17.00 min. I= 2.12 in/hr Qp= 36.04 cfs  
RETURN FREQUENCY: 25 year storm Adj.factor = 1.00  
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE  
For the 25 Year Storm

Time increment = 1.00 Minutes  
Time on left represents time for first Q in each row.

Time Minutes	0.00	3.60	7.21	10.81	14.42	18.02	21.62
0.00	0.00	3.60	7.21	10.81	14.42	18.02	21.62
7.00	25.23	28.83	32.44	36.04	36.04	36.04	36.04
14.00	36.04	36.04	36.04	36.04	32.44	28.83	25.23
21.00	21.62	18.02	14.42	10.81	7.21	3.60	0.00

Quick TR-55 Ver.5.46 S/N:  
Executed: 10:09:13 06-03-2014

GREENU COMMODITIES  
DEVELOPED DRAINAGE BASIN

\*\*\*\* Modified Rational Hydrograph \*\*\*\*  
Weighted C = 0.850 Area= 20.000 acres Tc = 10.00 minutes  
Adjusted C = 0.850 Td= 10.00 min. I= 3.80 in/hr Qp= 64.60 cfs  
RETURN FREQUENCY: 100 year storm Adj.factor = 1.00  
Output file: NONE STORED

HYDROGRAPH FOR MAXIMUM STORAGE  
For the 100 Year Storm

Time	Time increment = 1.00 Minutes						
Minutes	Time on left represents time for first Q in each row.						
-----	-----	-----	-----	-----	-----	-----	-----
0.00	0.00	6.46	12.92	19.38	25.84	32.30	38.76
7.00	45.22	51.68	58.14	64.60	58.14	51.68	45.22
14.00	38.76	32.30	25.84	19.38	12.92	6.46	0.00

Quick TR-55 Ver.5.46 S/N:  
 Executed: 10:09:13 06-03-2014

GREENU COMMODITIES  
 DEVELOPED DRAINAGE BASIN

\* \* \* \* \* SUMMARY OF RATIONAL METHOD PEAK DISCHARGES \* \* \* \* \*

$$Q = \text{adj} * C * I * A$$

Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres  
 adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 25 years  
 'C' adjustment, k = 1  
 Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELOPED	0.850	20.00						
			10.00	0.850	0.850	2.190	20.00	37.23

Quick TR-55 Ver.5.46 S/N:  
 Executed: 10:09:13 06-03-2014

GREENU COMMODITIES  
 DEVELOPED DRAINAGE BASIN

\* \* \* \* \* SUMMARY OF RATIONAL METHOD PEAK DISCHARGES \* \* \* \* \*

$$Q = \text{adj} * C * I * A$$

Where: Q=cfs, C=Weighted Runoff Coefficient, I=in/hour, A=acres  
 adj = 'C' adjustment factor for each return frequency

RETURN FREQUENCY = 100 years  
 'C' adjustment, k = 1  
 Adj. 'C' = Wtd.'C' x 1

Subarea Descr.	Runoff 'C'	Area acres	Tc (min)	Wtd. 'C'	Adj. 'C'	I in/hr	Total acres	Peak Q (cfs)
DEVELOPED	0.850	20.00						
			10.00	0.850	0.850	3.800	20.00	64.60



Quick TR-55 Ver.5.46 S/N:  
 Executed: 10:09:13 06-03-2014

MODIFIED RATIONAL METHOD  
 ---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

GREENU COMMODITIES  
 DEVELOPED DRAINAGE BASIN

RETURN FREQUENCY: 25 yr 'C' Adjustment = 1.000 Allowable Q = 24.09 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes  
 ::

						VOLUMES	
Weighted 'C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	Inflow (cu.ft.)	Storage (cu.ft.)
0.850	0.850	10	2.190	20.00	37.23	22,338	7,884
0.850	0.850	15	2.300	20.00	39.10	Qpeak > Qtc	
						***** Storage Maximum	
0.850	0.850	17	2.120	20.00	36.04	36,761	12,343
						*****	
0.850	0.850	20	1.850	20.00	31.45	37,740	9,691
0.850	0.850	30	1.450	20.00	24.65	44,370	3,395
0.850	0.850	40	1.200	20.00	20.40	Qpeak < Qallow	

Quick TR-55 Ver.5.46 S/N:  
 Executed: 10:09:13 06-03-2014

MODIFIED RATIONAL METHOD  
 ---- Summary for Single Storm Frequency ----

First peak outflow point assumed to occur at Tc hydrograph recession leg.

GREENU COMMODITIES  
 DEVELOPED DRAINAGE BASIN

RETURN FREQUENCY: 100 yr 'C' Adjustment = 1.000 Allowable Q = 41.80 cfs

Hydrograph file: NONE STORED Tc = 10.00 minutes  
 ::

VOLUMES							
Weighted 'C'	Adjusted 'C'	Duration minutes	Intens. in/hr	Areas acres	Qpeak cfs	Inflow (cu.ft.)	Storage (cu.ft.)
0.850	0.850	15	3.000	20.00	51.00	45,900	10,444
0.850	0.850	20	2.500	20.00	42.50	51,000	5,059
0.850	0.850	30	1.950	20.00	33.15	Qpeak < Qallow	



**Reno Office**  
815 Maestro Drive  
Reno, Nevada 89511

ph: 775.829.2245  
fax: 775.829.2213  
[www.mcgin.com](http://www.mcgin.com)

**Las Vegas Office**  
6280 S. Valley View Blvd.  
Suite 604  
Las Vegas, Nevada 89118

ph: 702.260.4961  
fax: 702.260.4968

June 10, 2014  
MGA Project No: GRN001

Nevada Division of Environmental Protection  
Bureau of Waste Management Division  
901 South Stewart Street, Suite 4001  
Carson City, NV 89701

**ATTN: PAUL ECKERT, P.E.**  
**STAFF ENGINEER III, PERMIT WRITER**

**RE: WASTE TIRE MANAGEMENT FACILITY REVISED PERMIT APPLICATION,**  
**ADDENDUM TO SECTION 2.6, GREENU COMMODITIES LLC, 11000 US ALT**  
**HWY 50, FERNLEY, NV, 89408**

Mr. Eckert:

Per your request in your June 9, 2014 electronic correspondence include herein are dimension/construction requirements and flow calculations for the proposed drainage ditch shown on Figure C2.1 which is included in Attachment 8 of waste tire management revised permit application dated June 6, 2014. The requested information which was generated by Tectonics Design Group is included as Appendix A.

## **LIMITATIONS**

The information presented herein is based strictly on information provided to MGA. MGA makes no warranties or guarantees as to the accuracy or completeness of information provided or compiled by others. Judgments and opinions leading to conclusions and calculations are generally made with an incomplete knowledge of the conditions present. Additional information not found or available to MGA at the time of preparing this permit application may result in a modification to the conclusions and calculations contained herein.

The services performed by MGA have been conducted in a manner consistent with the level of care ordinarily exercised by members of our profession currently practicing under similar conditions. No other warranty, expressed or implied, is made. The use of the word "certify" in this document constitutes an expression of professional opinion regarding those facts or findings which are the subject of the certification and does not constitute a warranty or guarantee, either expressed or implied.

## CLOSING

Should you have any questions regarding the information provided herein please contact Anthony Dimpel of McGinley and Associates at (775) 829-2245.

**Respectfully submitted,  
McGinley and Associates, Inc.**



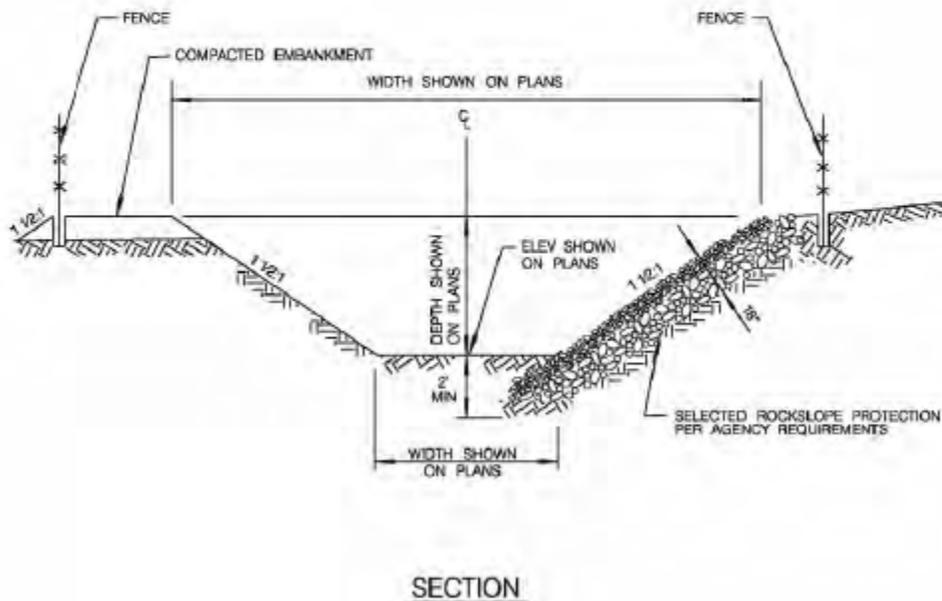
Anthony Dimpel, E.I., C.E.M # 2353, Exp. 3/20/2015  
Project Manager, McGinley and Associates

# **APPENDIX A**

## **Drainage Ditch Information**

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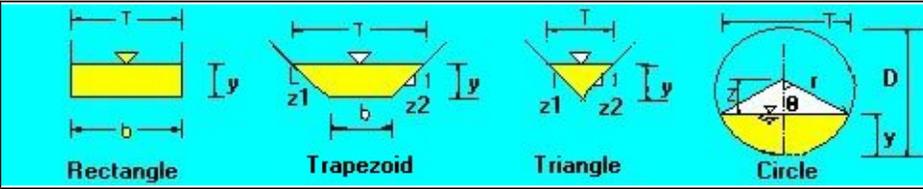
Based on information provided in the drainage report (Attachment 8 of waste tire management revised permit application dated June 6, 2014) the offsite area which will be required to be perpetuated around the site would be Basins 1, 2, and 3. The total 100 year flow for these areas is 49 cubic feet per second (cfs). The minimum slope of the drainage ditch will be 2%. The drainage ditch is going to be of trapezoidal design. A cross section of a typical trapezoidal drainage ditch is provided below.



Based on a 100 year flow of 49 cfs the trapezoidal drainage ditch will have the following dimensions:

- Channel Depth = 0.7 feet
- Top Width = 4.78 Feet
- Bottom Width = 2.0 Feet
- Side Slopes: 2:1
- Bottom Slope: 2%

A copy of the calculations used to determine channel dimensions is included on the following page.

The open channel flow calculator		
<p style="color: red;">Select Channel Type:</p> <div style="border: 1px solid black; padding: 2px; width: 100%;">Trapezoid ▾</div>		
<div style="border: 1px solid black; padding: 2px; width: 100%;">Depth from Q ▾</div>	<p style="color: red;">Select unit system:</p> <div style="border: 1px solid black; padding: 2px; width: 100%;">Feet(ft) ▾</div>	
<div style="border: 1px solid black; padding: 2px; width: 100%;">Channel slope: <input type="text" value="2"/> <small>ft/ft</small></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">Water depth(y): <input type="text" value="0.7"/> <small>ft</small></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">Bottom width(b) <input type="text" value="2"/> <small>ft</small></div>
<div style="border: 1px solid black; padding: 2px; width: 100%;">Flow velocity <input type="text" value="20.764"/> <small>ft/s</small></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">LeftSlope(Z1): <input type="text" value="2"/> <small>ft/ft</small></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">RightSlope(Z2): <input type="text" value="2"/> <small>ft/ft</small></div>
<div style="border: 1px solid black; padding: 2px; width: 100%;">Flow discharge <input type="text" value="49"/> <small>ft^3/s</small></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">Input n value <input type="text" value="0.06"/> or select r</div>	
<div style="border: 1px solid black; padding: 2px; width: 100%;">Calculate!</div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">Status: <span style="color: red;">Calculation finished</span></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">Reset</div>
<div style="border: 1px solid black; padding: 2px; width: 100%;">Wetted perimeter <input type="text" value="5.11"/> <small>ft</small></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">Flow area <input type="text" value="2.36"/> <small>ft^2</small></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">Top width(T) <input type="text" value="4.78"/> <small>ft</small></div>
<div style="border: 1px solid black; padding: 2px; width: 100%;">Specific energy <input type="text" value="7.39"/> <small>ft</small></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">Froude number <input type="text" value="5.21"/></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">Flow status <input type="text" value="Supercritical flow"/></div>
<div style="border: 1px solid black; padding: 2px; width: 100%;">Critical depth <input type="text" value="1.64"/> <small>ft</small></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">Critical slope <input type="text" value="0.0582"/> <small>ft/ft</small></div>	<div style="border: 1px solid black; padding: 2px; width: 100%;">Velocity head <input type="text" value="6.69"/> <small>ft</small></div>

Copyright 2000 Dr. Xing Fang, Department of Civil Engineering, Lamar University.

# **ATTACHMENT 9**

**State Fire Marshall Approval of EnExa**

---



**STATE FIRE MARSHAL  
PLANS STANDARD RESPONSE FORM**

Variance Request Number: 14-V007		File Number:
Date Received: 5/16/2014	Date Answered:	Received By: P MILTON
Subject: APPROVAL FOR THE USE OF A NEW SUPPRESSION SYSTEM FOR THE TIRE RECYCLNG PLANT		
Type of Occupancy:	Building Name: GREENU COMMODITIES	
Address: 11000 HIGHWAY 50, FERNLEY, NV		
Contact Person: LANCE DEHNE	Phone: 775-825-0454	

Reviewed By: <i>P. Smith</i>	Date Reviewed: 5/28/2014
Code Reference: 2006 IFC Sections 904 and 104.9	

Reviewed By:	Date Reviewed:
Comments:	

<b>Fire Marshal Review and Findings:</b>	
<i>The proposed alternate extinguishing system is acceptable for the proposed use.</i>	
Signed: <i>Peter Smith</i>	Date: 5/28/2014

RECEIVED

MAY 21 2014

Hello Patsy,

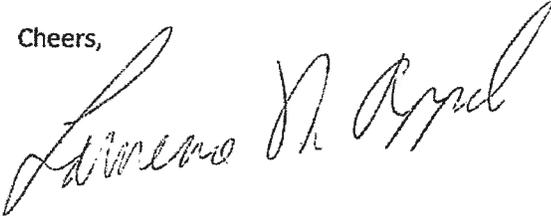
Monday, May 19, 2014

Office of State Fire Marshal  
Administration Section

I'm enclosing a check for \$110.00 to cover the cost of a variance for the GreeNu project near Fernley. It was submitted by Lance Dehne on behalf of GreeNu Commodities LLC. I understand there are a couple other variance requests in front of us but we are certainly looking forward to a positive result.

Hope your surgery goes well.

Cheers,



Lawrence N. Appel

CEO, Advanced Tek Systems

ms

115

5/21/14



Department Of Public Safety  
 State Fire Marshal Division  
 107 Jacobsen Way, Carson City Nevada 89711  
 Variance Request Form

RECEIVED

MAY 16 2014

Office of State Fire Marshal  
 Administration Section

Project Name: Greenu Commodities LLC	SFM Project #: 14-V007
Location of Project (actual): 11000 HWY 50	
City: Fernley	County: Lyon
Local Authority Having Jurisdiction: North Lyon County Fire Protection District	

Property/Project Owner's Information			
Name: Advanced TEK Systems			
Address: 1050 S 21st street	City: Sparks	State: NV	Zip: 89431
Daytime Phone: (775) 353-7153	E-mail: Larry@advanced tech systems.com		

Petitioner's Information			
Name: Lance Dehne DBA ARTineering		Title: P.E.	
Address: 960 Ridgeview Drive	City: Reno	State: NV	Zip: 89511
Daytime Phone: (775) 825-0454	E-mail: artineer@aol.com		

**Background: (Attach Documentation)** Greenu is a tire recycling plant that extracts oil, carbon black powder and steel from used tires by shredding and pyrolysis.

**Request: (Attach documentation)** the Victaulic "Vortex" hybrid suppression system use, instead of water and nitrogen, a water and chemical mixture called "EnExa" 110 and nitrogen. This is a fog forming, oxygen reducing system that also has a cooling effect that will be more suitable for a tire fire.

**Justification: (Attach documentation)** see attached. Basically it is the "Vortex" system which is UL tested and FM approved, but with a more effective extinguishing agent. The EnExa constituents make this agent more suitable for a fire involving tires.

*Lance M. Dehne*  
 FIRE PROTECTION  
 5.14.14  
 2014/12/14

Submitter's signature and stamp (if applicable):

State Fire Marshal Office use only

Date:

Date Received:	Base Fee \$110.00	Additional Fee:	Date Reviewed: 5/28/2014
Approved: <i>[Signature]</i>	Approved with exceptions:		Denied:
State Fire Marshal-Date <i>[Signature]</i> 5/28/2014		Local Authority Having Jurisdiction-Date	



**Department Of Public Safety  
State Fire Marshal Division  
107 Jacobsen Way, Carson City Nevada 89711  
Variance Request Form**

<b>Project Name:</b> Greenu Commodities LLC	<b>SFM Project #:</b>
<b>Location of Project (actual):</b> 11000 HWY 50	
<b>City:</b> Fernley	<b>County:</b> Lyon
<b>Local Authority Having Jurisdiction:</b> North Lyon County Fire Protection District	

Property/Project Owner's Information			
<b>Name:</b> Advanced TEK Systems			
<b>Address:</b> 1050 S 21st street	<b>City:</b> Sparks	<b>State:</b> NV	<b>Zip:</b> 89431
<b>Daytime Phone:</b> (775) 353-7153	<b>E-mail:</b> Larry@advanced tech systems.com		

Petitioner's Information			
<b>Name:</b> Lance Dehne DBA ARTineering		<b>Title:</b> P.E.	
<b>Address:</b> 960 Ridgeview Drive	<b>City:</b> Reno	<b>State:</b> NV	<b>Zip:</b> 89511
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Submitter's signature and stamp (if applicable):

*exp 12/14*  
Date:

State Fire Marshal Office use only

<b>Date Received:</b>	<b>Base Fee</b> \$110.00	<b>Additional Fee:</b>	<b>Date Reviewed:</b>
<b>Approved:</b>	<b>Approved with exceptions:</b>		<b>Denied:</b>

State Fire Marshal-Date

Local Authority Having Jurisdiction-Date



Lance Dehné, P.E.  
960 Ridgeview Drive  
Reno, NV 89511  
(775) 825-0454

March 14, 2014

**Nevada Department of Public Safety**  
State Fire Marshall Division  
Stewart Facility  
107 Jacobsen Way  
Carson City, NV 89711

Attn: Mr. Don Wilkins CBO, MCP  
Bureau Chief, Fire Protection Engineering.

Re: GreeNu Commodities LLC Tire Pyrolysis Facility

Dear Mr. Wilkins,

I have had several meetings with the GreeNu developers over the past few weeks. In these meetings we have discussed the use of a new and innovative type of fire suppression system to protect the above-mentioned facility. The system is the Victaulic "Vortex" system. Currently the "Vortex" system has been tested to put out electrical/electronic fires using a mixture of water and nitrogen. The nitrogen is not only part of the fire-fighting medium, but it is also the driver to expel the mixture through nozzles under low pressure and high volume to create a fog. It is very effective, non-toxic, and has no negative collateral side effects.

GreeNu Commodities LLC would like to use this system but with an extra fire-fighting ingredient called "EnExa" added to the water. This ingredient enhances the reduction of oxygen and cooling of the surfaces and surroundings. Specifically, we would like to use this system in the T.I area, the tire processing (pyrolysis equipment) area, the tire shredding area, break room, and vestibule. These areas will be protected by individual systems as describe in detail in Victaulic's conceptual design report (attached).

We have exhausted the "what if" scenarios and have come to the conclusion that this system, using the "EnExa" fire suppression agent and nitrogen mix, would be a very good fire suppression application system for this facility and is particularly effective for fighting tire and fuel fires plus it only uses 10% of the water of a deluge system.

Of course all safety measures and training will be in place for any personnel affected by the implementation of this system.

Rather than providing a more conventional system such as wet sprinkler, deluge or foam for fire protection, I submit that this system be approved by your office as an acceptable "alternate materials and methods" and that the UL testing on the system be sufficient. Complete design drawings, calculations and materials submittals will be provided prior to installation. The system will be tested in the field once installed to ensure that it performs as anticipated and I will personally witness the test.

Please see attached MSDS sheets for the oil, carbon char and EnExa. Also there is attached an emergency response plan and correspondence from the local authority having jurisdiction.

Please call if you should have any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Lance Dehné". The signature is fluid and cursive, with a prominent initial "L" and a long, sweeping underline.

Lance Dehné, P.E.

Attach: Victaulic report, MSDS sheets, emergency response plan and correspondence.

WESTERN NEVADA RAIL PARK  
GREEN COMMODITIES, LLC

Hi Larry,  
sorry the first one I send to the wrong address, Hope this is the right one.  
See you tomorrow.  
Eddy

----- Forwarded Message -----

**From:** John Ashmore <JAshmore@victaulic.com>  
**To:** "edmundp@sbcglobal.net" <edmundp@sbcglobal.net>  
**Cc:** Frank Freidl <ffreidl@victaulic.com>  
**Sent:** Friday, April 11, 2014 3:12 PM  
**Subject:** Pyrolysis Project Conceptual Design and Rough Order of Magnitude Budget

Eddy,

Thanks for your time last week. This is a very exciting project for Vortex, and hopefully the Nevada State Fire Marshal will bless it. Based on our discussion I believe the following multiple zone design concept should offer good fire protection for the Tire Pyrolysis facility. For this exercise I'm going to use 30' as the ceiling height throughout since I don't have much else to go on. If the ceilings are higher or lower, we'll have to adjust the amount of nitrogen and water required. I am also calculating the systems based on an elevation of 4000' above sea level.

I'm going to propose this conceptual layout looking at the attached drawing from left to right, starting with the area designated as T.I. Spaces, 104. If the developer would divide this space into four zones of equal size, each zone would be about 25' X 60' X 30'. So the four (4) T.I. Spaces zones are 45,000 cubic feet each. To protect each of those zones the Vortex system would have thirteen (13) 1/2" Machine Space emitters. Twenty-two (22) 80L nitrogen cylinders would have to be discharged into any one of these to achieve the desired oxygen level of 14-15%. Seventy three (73) gallons of water, atomized into ultrafine droplets less than 10 microns in diameter, would be discharged over a 5 minute period.

Based on our discussions last week, the Processing Equipment section would be divided into two zones of equal size, each one 50' X 60' X 30', a volume of 90,000 cubic feet. To protect this volume the Vortex system would have twenty seven (27) 1/2" Machine Space emitters. Forty three (43) 80L nitrogen cylinders would have to be discharged into either zone to achieve the desired oxygen level of 14-15%. 143 gallons of water, atomized into ultrafine droplets less than 10 microns in diameter, would be discharged over a 5 minute period.

As we discussed, The Tire Shredder and Tire Shredding area 102 would be divided into two zones, one 60' X 60' X 30' and another 60' X 30' X 30', volumes 108,000 and 54,000 cubic feet respectively. To protect the larger volume the Vortex system would have thirty two (32) 1/2" Machine Space emitters, and fifty one (51) 80L nitrogen cylinders would have to be discharged to achieve the desired oxygen level of 14-15%. 171 gallons of water, atomized into ultrafine droplets less than 10 microns in diameter, would be discharged over a 5 minute period. To protect the smaller volume the Vortex system would have sixteen (16) 1/2" Machine Space emitters, twenty six (26) 80L nitrogen cylinders would have to be discharged to achieve the desired oxygen level of 14-15%. 86 gallons of water, atomized into ultrafine droplets less than 10 microns in diameter, would be discharged over a 5 minute period.

The Vestibule, area 101, appears to be around 65' X 40' X 30', a volume of 78,000 cubic feet. To protect this volume the Vortex system would have twenty three (23) 5/8" Data Center emitters. Thirty seven (37) 80L nitrogen cylinders would have to be discharged into either zone to achieve the desired oxygen level of 14-15%. 124 gallons of water, atomized into ultrafine droplets less than 10 microns in diameter, would be discharged over a 5 minute period.

And finally, the Break Room/Clinic appears to be around 20' X 40' X 30', a volume of 24,000 cubic feet. To protect this volume the Vortex system would have seven (7) 5/8" Data Center emitters. Twelve (12) 80L nitrogen cylinders would have to be discharged into either zone to achieve the desired oxygen level of 14-15%. 39 gallons of water, atomized into ultrafine droplets less than 10 microns in diameter, would be discharged over a 5 minute period.

The largest zone size is 108,000 cubic feet, which is the volume that will determines the total nitrogen requirement for this multi-zone system. The largest zone also discharges the largest water volume, 171 gallons, so this volume dictates the size of the water tank we would provide. The Vortex Bill of Materials for this entire project would be as follows:

Zone	Volume Ft3	Emitter Count	Emitter Type	Discharge Time (Minutes)	Cylinder Count
TI Zone 1	45000	13	½" MS	5	22
TI Zone 2	45000	13	½" MS	5	22
TI Zone 3	45000	13	½" MS	5	22
TI Zone 4	45000	13	½" MS	5	22
Processing Equipment Zone 1	90000	27	½" MS	5	43
Processing Equipment Zone 2	90000	27	½" MS	5	43
Tire Shredder Zone 1	108000	32	½" MS	5	51
Tire Shredder Zone 2	54000	16	½" MS	5	26
Vestibule Area 101	78000	23	5/8" DC	5	37
Break Room/Clinic	24000	7	5/8" DC	5	12

MS: Machine Space Emitters. DC: Data Center Emitters

**Emitter Options**

- 157 Brass Machine Space Emitter, 3/4" NPT 1/2" Orifice (Submittal 70.02)
- 157 Machine Space Flow Cartridge, 1.06 GPM, Brass (Submittal 70.02)
- 157 Emitter Trim Kit, includes galvanized nipples, fittings, reducers, and compression fittings (Submittal 70.02)
- 157 Strainer, 3/4" NPT Brass

**Vortex Panels**

- 10 1.5" Zone Box, Dry Contact, H2O Ball Valve (Submittal 70.08)
- 2 1.5" Fluid, Dry Contact, Active Release Manifold (Submittal 70.08)
- 1 Fluid to Zone Piping Relief Valve

**Electrical Supply Options to supplement FACP**

- 4 Dry Contact Battery Backup Power Supply

**Nitrogen Supply**

- 51 Victaulic Vortex Nitrogen Cylinder with Release Valve, Filled 80L (Submittal 70.07)
- 6 Victaulic Vortex Series 950 3000psi Cylinder Primary Pilot Kit (Submittal 70.07)
- 45 Victaulic Vortex Series 950 3000psi Cylinder Secondary Kit (Submittal 70.07)
- 5 1/4" Double Row Connector Hose, 700MM
- 45 Victaulic Vortex Cylinder Secondary Pilot Gauge
- 1 Vortex Cylinder Refill Adapter - Needed to refill cylinders at local gas suppliers (Submittal 70.07)

**High Pressure Nitrogen Manifold(s)**

- 1 Four Port Double Row (2x2), including one high pressure plug (Submittal 70.07)
- 4 Twelve Port Double Row (6x2), including one high pressure plug (Submittal 70.07)
- 1 1.5" Manifold Isolation Assembly with monitoring switch (Submittal 70.04)
- 1 Regulated Charge Kit to charge water tank with high pressure nitrogen. Integrator to tap into piping between manifold and panel

**Nitrogen Cylinder Rack(s) - (Assembly Required)**

- 1 Cylinder Storage Rack (4-pack 2x2) (Submittal 70.07)
- 4 Cylinder Storage Rack (12 pack 6x2) (Submittal 70.07)

**Water Supply Options**

- 1 200 Gallon Water Supply (Submittal 70.05)

Victaulic is not a contractor and does not provide installation crews to install the Vortex System or any other products. However, based on our experience in providing systems of a broad range of sizes, we believe that a conservative, Rough Order of Magnitude Budgetary Price Estimate for a this multi-zone system would be around \$800,000.00.

This price is subject to change and is provided based solely on the representations of the size and scope of the job provided by you. An actual site survey will have to be conducted by a Certified Vortex Integrator to provide a firm quotation.

Whether or not your chemical product should be used in the Vortex system is a matter that needs to be studied. Please let me know if and when you can provide enough material to us for basic and comprehensive testing.

Thanks again for your interest in the Vortex System. I look forward to discussing this project with you after you have presented it to your customer. Please feel free to call me if you have any questions.

John Ashmore  
Vortex Sales Specialist  
Victaulic Company  
Cell Phone: 925-518-0091  
Fax: 925-848-3400  
Customer Care Telephone: 1-877-9VORTEX (1-877-986-7839)



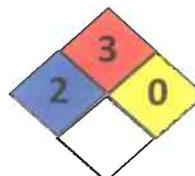
# MATERIAL SAFETY DATA SHEET

## Waste Rubber Derived Oil

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Waste Rubber Derived Oil  
Chemical Synonym: Tire Oil  
Chemical Family: Petroleum Product  
Chemical Formula: N/A  
Manufacturer: GreeNu Commodities LLC  
11000 US Hwy 50  
Fernley, NV 89408  
253.365.9333

Emergency Telephone Numbers:  
NFPA Classification:  
Date of Preparations: 14 November, 2013



### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture of saturated and unsaturated hydrocarbons.

Chemical Constituents	Cas #	% By Weight	OSHA		WA State		ACGIH		
			TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Benzene	71-43-2	1-5	1	5	1	5	10	NA	3000
Ethyl Benzene	100-41-4	5-10	100	NA	100	125	100	125	2000
Naphthalene	91-20-3	<5	10	NA	10	15	10	15	500
n-Pentane	109-66-0	<5	1000	NA	600	750	600	750	5000
Styrene	100-42-5	3-6	100	NA	50	100	50	100	5000
Toluene	100-88-3	7-10	100	150	100	150	50	NA	2000

TWA, STEL, IDLH in parts per million

TVL – Threshold Limit Value – Maximum full time concentration

TWA – Time Weighted Averages – 8 hour period

STEL – Short Term Exposure Limit – 15 minutes/60 minute interval/4 times per day maximum

IDLH – Immediate Danger to Life and Health – 30 minute exposure threshold

Styrene: 200 ppm ceiling; 600 ppm maximum peak for 5 minutes in any 3 hours

Toluene: 300 ppm ceiling; 500 ppm maximum peak for 10 minutes in any 3 hours

### 3. HAZARDS IDENTIFICATION

Tire derived oil is a dark brown liquid. The degree of airborne exposure is dependent upon the area open for vapors to escape and the temperature of the oil.

Eyes: ACUTE – Mild to severe irritation, redness, burning, blurred vision. CHRONIC – Not determined

Skin: ACUTE – Mild irritation, burning, drying, flaking, staining. CHRONIC – Not determined

Inhalation: ACUTE – Over exposure can cause dizziness, disorientation, headache, nausea, fatigue and lung irritation. CHRONIC – Continued inhalation can adversely affect liver, kidney and lungs

Ingestion: ACUTE – Over exposure can cause irritation to mouth, throat, stomach, headache, gastrointestinal irritation, narcosis, vomiting, diarrhea, jaundice, coma and hemolytic anemia.

CHRONIC – Continued low level exposure. Research exposure increased the incidence of leukemia in exposure levels of 210 to 650 ppm. Daily mean styrene exposure levels of 10-500 ppm resulted in adverse effects on Visio-motor speed, memory and intellectual function. Toluene exposure of pregnant employees has resulted in adverse fetal developmental effects.

#### 5. FIRST AID MEASURES

Eyes: Flush with eye solution or large amounts of water. Continue until irritation subsides. Get medical attention immediately.

Skin: Immediately wash with warm water and soap. Remove contaminated clothing. Get medical attention if any irritation occurs.

Inhalation: Remove to fresh air. Get medical attention if symptoms occur.

Ingestion: Seek medical attention. Do not induce vomiting. Do not give mouth-to-mouth.

#### 6. FIRE FIGHTING MEASURES

Flash Point: 120°F

Method: Pinsky Martens Closed Cup

Flammability Limits: Not Determined

Special Fire Fighting Procedures: Wear protective gear that may be required for fighting fire.

Extinguishing Media: Foam, CO<sub>2</sub>, dry chemical, water fog to control vapors – Stop flow of oil.

Unusual Fire and Explosion Hazard: Not Determined

#### 8. SPILL CONTROL AND RECOVERY

Small Spill Control and Recovery: Oil absorbent should be used to contain and soak up oil. Do not use a combustible material. Wear appropriate personal protective equipment.

Large Spill Control and Recovery: Safely eliminate the source of the leak. Eliminate ignition sources. Prevent runoff from entering drainage and storm sewers. Use water fog to control vapors.

#### 7. HANDLING AND STORAGE

Stability: Material is stable under normal storage and handling situations.

Incompatibility: Avoid contact with acids and oxidizing agents.

Hazardous Decomposition Products: CO, H<sub>2</sub>S

Hazardous Polymerization: Not determined.

Eyes: ACUTE – Mild to severe irritation, redness, burning, blurred vision. CHRONIC – Not determined

Skin: ACUTE – Mild irritation, burning, drying, flaking, staining. CHRONIC – Not determined

Inhalation: ACUTE – Over exposure can cause dizziness, disorientation, headache, nausea, fatigue and lung congestion. CHRONIC – Continued inhalation can adversely affect liver, kidney and lungs

Ingestion: ACUTE – Over exposure can cause irritation to mouth, throat, stomach, headache, gastrointestinal irritation, narcosis, vomiting, diarrhea, jaundice, coma and hemolytic anemia. CHRONIC – Benzene is a carcinogen. Benzene exposure increased the incidence of leukemia in exposure levels of 210 to 650 ppm. Daily mean styrene exposure levels of 10-300 ppm resulted in adverse effects on Visio-motor speed, memory and intellectual function. Toluene exposure of pregnant employees has resulted in adverse fetal developmental effects.

#### **4. FIRST AID MEASURES**

Eyes: Flush with eye solution or large amounts of water. Continue until irritation subsides. Get medical attention immediately.

Skin: Immediately wash with warm water and soap. Remove contaminated clothing. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

Inhalation: Remove to fresh air. Get medical attention if symptoms occur.

Ingestion: Seek medical attention. Do not induce vomiting. Do not give mouth-to-mouth.

#### **5. FIRE FIGHTING MEASURES**

Flash Point: 120°F

Method: Pensky Martens Closed Cup

Flammability Limits: Not Determined

Special Fire Fighting Procedures: Wear protective gear including oxygen-breathing apparatus.

Extinguishing Media: Foam, CO<sub>2</sub>, dry chemical, water fog to control vapors – Stop flow of oil.

Unusual Fire and Explosion Hazard: Not Determined

#### **6. ACCIDENTAL RELEASE MEASURES**

Small Spill Control and Recovery: Oil absorbent should be used to contain and soak up oil. Do not use a combustible material. Wear appropriate personal protective equipment.

Large Spill Control and Recovery: Safely eliminate the source of the leak. Eliminate ignition sources. Prevent runoff from entering storm sewer and ditches. Water fog can be used to control vapors.

#### **7. HANDLING AND STORAGE**

Stability: Material is stable under normal storage and handling situations.

Incompatibility: Avoid contact with acids and oxidizing agents.

Hazardous Decomposition Products: CO, H<sub>2</sub>S

Hazardous Polymerization: Not determined.

Storage: Store in tight sealed container at ambient temperature in well ventilated areas. Do not store near flame or heat.

Handling: Only in well ventilated areas. Keep container closed when not dispensing product. Avoid body contact. Use grounding and bonding devices when transferring material.

#### 8. EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Controls: Use process enclosures, explosion proof local exhaust and general ventilation to maintain airborne concentrations below the applicable exposure limits. Store away from heat and flame.

Administrative Controls: Training must be conducted before routine and non-routine handling. Respiratory Protection: Maintain atmospheric levels below exposure limits. SCHA or respirator when liquid is warm.

Protective Equipment: Apron or overalls to prevent staining and exposure to skin.

Protective Gloves: Rubber nitrile, viton.

Eye Protection: Goggles, safety glasses, face shield. Full face respirator if eye irritation occurs.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark Amber
Physical State:	Liquid
Odor:	Aromatic, Pungent
Ph:	4.7
Specific Gravity (H2O=1):	0.958
Viscosity:	45.8@100F
Volatiles By Vol. %:	60%
Boiling Point:	185°F
Vapor Pressure (mm/hg):	Not Determined
Vapor Density (air=1):	Not Determined
Flash Point:	120 OF.
Auto Ignition Temp:	800 OF.
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water:	Not Determined

#### 10. TOXICOLOGY/CARCINOGENITY INFORMATION

Toxicology: Nervous system, blood disorders, liver and kidney damage.

Eyes: Mild to severe irritation.

Skin: Lethal limits at dermal LD50s in rabbits: >8,263 mg/kg benzene, 17,800 mg/kg ethyl benzene, >20 gm/kg naphthalene, and 14 mg/kg toluene.

Inhalation: LC50s for rats: 10,000ppm benzene, 4,000ppm ethyl benzene, 24hm/m3 styrene, LC50s for mice: 9,980ppm benzene, 400ppm toluene.

Ingestion: LD50s for rats: 930 mg/kg benzene, 3,500 mg/kg ethyl benzene, 1,250 mg/kg naphthalene, 5,000mg/kg styrene. LD50s for mice: 4,700 mg/kg benzene, 354 mg/kg naphthalene, 316 mg/kg styrene, 1.12 mg/kg toluene.

Subchronic: Rats exposed to 13.6, 136, 408, 680 mg/kg/day ethyl benzene in 182-day oral bioassay indicate liver and kidney damage at and above 408 mg/kg/day. Rat oral exposure to 0, 312, 625, 1,250, 2,500, 5,000, mg/kg toluene for 13 weeks. Death occurred within one week at 5,000 dose and within test period at 2,500. No deaths occurred at lower dosages. Toxic affects included prostration, hyperactivity, ataxia, piloerection, lacrimation, excessive salivation, body tremors.

#### 11. STABILITY AND REACTIVITY

Chemical Stability: Stable under normal storage and handling situations.

Incompatibility: Avoid contact with acids and oxidizing agents.

Hazardous Decomposition Products: Carbon Monoxide

Hazardous Polymerization: Not Determined

#### 12. ECOLOGICAL INFORMATION

Ecotoxicological information: Acute lowest effect levels for freshwater organisms: 5,300 ug/L benzene 32,000 ug/L ethyl benzene, 2,300 ug/L naphthalene, 17,500 ug/L toluene. Product has the potential to cause large fish kills if released in substantial quantities to waterways (i.e., potentially dangerous to aquatic organisms). However, long term or chronic effects are not expected because of the anticipated short half-life of the product in the environment.

Distribution: The chemical constituents that comprise this product are volatile in nature and are expected to be readily released to the atmosphere from water and soil. It is expected that the bio concentration potential of the product is low; therefore, retention in plants and animals is expected to be minimal. Chemical fate information: Degradation is expected in the environment. Bio degradation is expected if the conditions are favorable.

#### 13. DISPOSAL CONSIDERATIONS

RCRA hazardous waste if discarded (D001 or D018). A determination will have to be made by the end user to whether the waste is D001 or D0108, it may be subject to land disposal restrictions under 40 CFR 268, "Land Disposal Restriction". Waste must be disposed of in accordance with federal, state, and local environmental control regulations.

Empty containers retain residue and can be dangerous; therefore, they must be handled with care. Empty drums should be completely drained, properly closed and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner in accordance with governmental regulations.

Do not pressurize, cut, weld, braze solder, drill, grind or expose to heat, sparks, static electricity or other sources of ignition; they may cause injury or death.

#### 14. TRANSPORTATION INFORMATION

DOT Shipping Name:	Flammable Liquid, n.o.s
Technical Shipping Name:	Tire Derived Oil
DOT Hazard Class:	3
UN/NA Number:	UN 1993
DOT Label:	Flammable Liquid

DOT Placard: Flammable  
Product Label: Tire Derived Oil  
Packing Group: II

#### 15. REGULATORY INFORMATION

OSHA Status: This product is considered hazardous under the criteria of the Federal OSHA Hazard Communications Standard 29 CFR 1910.1200.

CERCLA Reportable quantities:

Chemical Constituents:	% by weight.	RQ(lbs)
Benzene	1-5	10
Ethyl Benzene	5-10	1,000
Naphthalene	<5	1,000
n-Pentane	<5	none
Styrene	15-25	1,000
Toluene	8-14	1,000

Extremely hazardous substances: None

Hazard Categories: Immediate health hazard; fire hazard.

Toxic Chemicals: Benzene, Ethyl Benzene, Naphthalene, Styrene, Toluene.

RCRA status: RCRA hazardous waste if discarded (D001 or D018).

#### 16. OTHER INFORMATION

GreeNu Commodities, LLC provides the information in this MSDS in good faith. The MSDS represents an evaluation of Tire Derived Oil on available analytical, OSHA and industrial hygiene information. No evaluation of potential additive or synergistic effects were considered in the development of this MSDS. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for particular purpose or use.

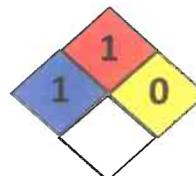
# MATERIAL SAFETY DATA SHEET

## Waste Rubber Derived Carbon Char

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Tire Derived Carbon Char  
Chemical Synonym: Tire Char  
Chemical Family: Petroleum Product  
Chemical Formula: N/A  
Manufacturer: GreeNu Commodities LLC  
11000 US Hwy 50  
Fernley, NV 89408  
253.365.9333

Emergency Telephone Numbers:  
NFPA Classification:  
Date of Preparations: 14 November, 2013



### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture of saturated and unsaturated hydrocarbons.

PEL – Permissible Exposure Limit OSHA ACGIH

Chemical Constituents	Cas #	% By Weight	TWA	STEL	TWA	STEL	IDLH
Carbon Black	7440-44-0	100	3.5mg/M3	5	10	NA	3000

TWA, STEL, IDLH in parts per million

TVL – Threshold Limit Value – Maximum full time concentration

TWA – Time Weighted Averages – 8 hour period

STEL – Short Term Exposure Limit – 15 minutes/60 minute interval/4 times per day maximum

IDLH – Immediate Danger to Life and Health – 30 minute exposure threshold

Styrene: 200 ppm ceiling; 600 ppm maximum peak for 5 minutes in any 3 hours

Toluene: 300 ppm ceiling; 500 ppm maximum peak for 10 minutes in any 3 hours

### 3. HAZARDS IDENTIFICATION

Eyes: ACUTE – Nuisance dust may cause discomfort or irritation due to scratching. CHRONIC – None Reported

Skin: ACUTE – May cause irritation, follicular blackheads or irritation if extended contact.

CHRONIC – Not determined

Inhalation: ACUTE – Dust is classified as nuisance dust. CHRONIC – None Reported

Ingestion: ACUTE – Dust is classified as nuisance dust. CHRONIC – None Reported

#### 4. FIRST AID MEASURES

Eyes: Flush with eye solution or water, gently lifting lids to clean.  
Skin: Remove contaminated clothing taking precautions to avoid breathing dust that becomes airborne. Wash skin with soap and water. Get medical attention if symptoms occur. Wash contaminated clothing as desired.  
Inhalation: Remove to fresh air. Get medical attention if symptoms occur.  
Ingestion: Drink 1-2 glasses of water. Get medical attention if symptoms occur.

#### 5. FIRE FIGHTING MEASURES

Flash Point: NA  
Method: NA  
Flammability Limits: Not Determined  
Special Fire Fighting Procedures: Airborne carbon dust can ignite. Burning carbon may not be obvious, may be seen as sparking or flowing when stirred.  
Extinguishing Media: Water, dry chemical, carbon dioxide or other media for Class A Combustibles is effective.  
Unusual Fire and Explosion Hazard: Not Determined.

#### 6. ACCIDENTAL RELEASE MEASURES

Spill Control and Recovery: Use water to control dust, scoop up into container for disposal.

#### 7. HANDLING AND STORAGE

Stability: Material is stable under normal storage and handling situations.  
Incompatibility: Avoid contact with acids and oxidizing agents.  
Hazardous Decomposition Products: NA  
Hazardous Polymerization: NA  
Storage: Store in tight sealed container at ambient temperature in well ventilated areas. Do not store near flame or heat.  
Handling: Only in well ventilated areas. Keep container closed. Dust containment is difficult.

#### 8. EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Controls: Use process enclosures.  
Administrative Controls: Training must be conducted before routine and non-routine handling.  
Respiratory Protection: Maintain atmospheric levels below exposure limits.  
Protective Equipment: As desired.  
Eye Protection: As desired.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Black
Physical State:	Dusty Powder
Odor:	None to slight
Ph:	7.5

Specific Gravity (H2O=1):	1.7-1.9
Viscosity:	NA
Volatiles By Vol. %:	NA
Boiling Point:	NA
Vapor Pressure (mm/hg):	Not Determined
Vapor Density (air=1):	Not Determined
Flash Point:	NA
Auto Ignition Temp:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water:	Not Determined

#### **10. TOXICOLOGY/CARCINOGENITY INFORMATION**

Toxicology: NA  
Carcinogenetic: NA

#### **11. STABILITY AND REACTIVITY**

Chemical Stability: Stable under normal storage and handling situations.  
Incompatibility: Avoid contact with acids and oxidizing agents.  
Hazardous Decomposition Products: Carbon Monoxide  
Hazardous Polymerization: NA

#### **12. ECOLOGICAL INFORMATION**

No special hazards or considerations for this product.

#### **13. DISPOSAL CONSIDERATIONS**

Not considered a Hazardous Material or Hazardous Waste. Waste must be disposed of in an environmentally safe manner and in accordance with federal, state, and local environmental control regulations.

#### **14. TRANSPORTATION INFORMATION**

Not considered a Hazardous Material under US DOT Regulations

#### **15. REGULATORY INFORMATION**

OSHA Status: NA

#### **16. OTHER INFORMATION**

GreeNu Commodities, LLC provides the information in this MSDS in good faith. The MSDS represents an evaluation of Tire Derived Carbon Char on available analytical, OSHA and industrial hygiene information. No evaluation of potential additive or synergistic effects were considered in the development of this MSDS. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for particular purpose or use.



## SAFETY DATA SHEET

### EnExa - 110

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#### 1 IDENTIFICATION OF THE SUBSTANCE /PREPARATION AND THE COMPANY

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**PRODUCT NAME:** EnExa 110 Fire Extinguishing and Retarding Agent

**PART NO:** 37147

**SUPPLIER:** MTI Research & Development  
551 Wedge Lane  
Fernley NV 89408  
USA

**TEL:** 0+ (775) 546-3181

**EMERGENCY TELEPHONES:** N/A

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#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

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##### COMPOSITION COMMENTS:

Name	Concentration	CAS Number	Risk Phrases
Citric Acid	2.5 – 4.1 %	77-92-9	
DAP	8.0 – 12.0 %	7783-28-0	
Urea	7.2 – 9.5 %	57-13-6	S-2
Potassium Hydroxide	0.5 – 2.5 %	1310-58-3	S-24
Non-Toxic proprietary			S-46
Aqueous solution of organic and in-organic Compounds.	2.5 – 6.5 %	N/A	

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#### 3 HAZARDS IDENTIFICATION

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**CRITICAL HAZARDS:** Nil

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#### 4 FIRST AID MEASURES

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**INHALATION:** Remove person to fresh air. If not breathing give artificial respiration. If breathing is difficult, get immediate medical attention.

**INGESTION:** Drink plenty of water. Seek medical attention if discomfort occurs.

**SKIN:** Wash promptly with soap and water. Remove contaminated clothing.

**EYES:** Flush with generous amounts of water, if irritation occurs, seek medical attention.

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#### 5 FIRE FIGHTING MEASURES

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**EXTINGUISHING MEDIA:** This material is not flammable

**COMBUSTION PRODUCTS:** Nil

**FIRE-FIGHTING PROCEDURES:** Not Applicable

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#### 6 ACCIDENTAL RELEASE MEASURES

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**SPILL CLEAN UP METHODS:** Substance can create slippery surface

Absorb with vermiculite, sand or earth and place into containers for safe disposal

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#### 7 HANDLING AND STORAGE:

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**USAGE PRECAUTIONS:** See data Sheet

**STORAGE PRECAUTIONS:** Store in original container. Do not Store below 8°C and above 35°C

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#### 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

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**EYE PROTECTION:** Avoid mist or vapour

**HAND PROTECTION:** Nil.

**SKIN PROTECTION:** Nil.

**RESPIRATORY PROTECTION:** Avoid inhalation of mist or spray.

**INGESTION:** Do not eat, smoke or drink when using this product. Wash hands before eating, using toilet and at the end of working day.

**VENTILATION:** Only use with adequate ventilation.

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#### 9 PHYSICAL AND CHEMICAL PROPERTIES

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**APPEARANCE AND ODOUR:** water clear  
**PH LEVEL:** 7.8 – 8.0  
**BOILING POINT:** 110°C  
**MELTING POINT:** Not Applicable  
**FLASH POINT:** None  
**AUTO FLAMMABILITY:** None in boiling  
**VAPOUR PRESSURE:** Not determined  
**WATER SOLUBILITY:** 100%  
**VISCOSITY:** Not Established  
**REFRACTIVE INDEX:** Not Established  
**SPECIFIC GRAVITY:** At 25°C 1.15 g/ml  
**VAPOUR DENSITY:** Not determined  
**VOLATILE ORGANIC COMPOUNDS:** Nil  
**EVAPORATION RATE:** Not determined  
**PERCENT VOLATILE:** Nil  
**DENSITY:** 9.6 lb per US Gallon vs. 8.345

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## 10. STABILITY AND REACTIVITY

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**CONDITIONS TO AVOID:** Reactive metals Aluminium.  
Do not mix with chlorine bleach or other products containing sodium hypochlorite / strong oxidisers

**DECOMPOSITION PRODUCTS:** None

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## 11. TOXICOLOGICAL INFORMATION

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**HEALTH HAZARDS, GENERAL:** This product is non-toxic.  
**EFFECTS FROM INHALATION:** None stated.  
**EFFECTS FROM INGESTION:** Not Established  
**EFFECTS FROM SKIN CONTACT:** Not Established  
**EFFECTS FROM EYE CONTACT:** Not Established

**OTHER EFFECTS:** Nil

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## 12 ECOLOGICAL INFORMATION

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**ACUTE TOXICITY DATA:** Oral LD<sub>50</sub> >5000mg/kg  
LC<sub>50</sub> 2.86 ml/L *Ceriodaphnia dubia*  
LC<sub>50</sub> 2.20 ml/L *Pimephales promelias*  
Dermal Primary irritation index 1.13  
This substance is non-toxic i.a.w. OECD Guideline 203  
No evidence of bioaccumulation or tainting of seafood  
This substance is biodegradable i.a.w. OECD Guideline 301 A-E

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## 13 DISPOSAL CONSIDERATIONS

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**DISPOSAL METHODS:** Dispose of in accordance with Local Authority requirements.  
Discharge spent solutions to waste water treatment system.

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## 14 TRANSPORT INFORMATION

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**UN No:** Not Applicable  
**UK ROAD/SEA FRIEGHT (IMO) CLASSIFICATION:**

**SUBSTANCE IDENTIFICATION NUMBER:** Not Applicable  
**CLASS:** Not Applicable  
**PACKING GROUP:** Not Applicable  
**PROPER SHIPPING NAME:** Not Applicable  
**CDG-ROAD (if applicable):** Not Applicable

**ADR/RID CLASSIFICATION:**

**CLASS:** Not Applicable  
**ITEM NUMBER:** Not Applicable

**ICAO/IATA CLASSIFICATION:**

**CLASS:** Not Applicable  
**SUB RISK:** Not Applicable  
**PACKING GROUP:** Not Applicable

**PROPER SHIPPING NAME:**

Not Applicable

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**15. REGULATORY INFORMATION**

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**SYMBOLS(S):** None

**RISK PHRASES:** Not classified

**SAFETY PHRASES:** S-2 Keep out of reach of children  
S24 Avoid contact with skin. After contact with skin, wash promptly with plenty of water.  
S-46 Drink plenty of water. Get medical attention if discomfort continues.

**UK REGULATORY REFERENCES:** Health & Safety at Work Act 1974

**UK ENVIRONMENTAL LISTINGS:**

Rivers (Prevention of Pollution) Act 1961  
Control of Pollution (Special Waste Regulations) Act 1980

**EC DIRECTIVES:** Substances Directive 67/548/EEC,  
General Preparations Directive 88/379/EEC

**STATUTORY INSTRUMENTS:** Chemicals (Hazard Information and Packaging for Supply) Regulations.  
Control of Substances Hazardous to Health Regulations 1999

**APPROVED CODE OF PRACTICE:**

Classification and Labelling of Substances and Preparations Dangerous for Supply.  
Product toxicological review 16 CFR 1500 (USA)

**GUIDANCE NOTES:** Occupational Exposure Limits EH40 latest issue.  
CHIP for everyone HSG (108)

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**16 OTHER INFORMATION**

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**USER NOTES:** To be used as a water additive for fire retarding and extinguishing. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief accurate and reliable as of the date indicated

**INFORMATION SOURCES:** Clayton, G.D. and F.E.: Patty's Industrial Hygiene and Toxicology Volumes I-III (1991).  
H&S Executive: Occupational Exposure Limits (EH40/latest issue).

**REVISION DATE:** 15<sup>th</sup> April 2003

May 14, 2014

## **GreenNu Commodities LLC Fire Protection Plan** Prepared by Larry Appel

### **Background**

GreenNu Commodities LLC is building a tire recycling facility in Lyon County between Fernley and Hazen along Hwy 50.

The production facility will be approximately 21,000 Sft. and will have detached office space of approximately 1600 Sft. with an outdoor tire storage area of 166,500 Sft. stored in compliance with IFC Chapter 25.

### **Introduction**

In this facility we would like to introduce new fire protection technology that we feel will be very effective for tire and fuel fires.

### **Hazards to Protect**

The GreenNu Commodities LLC facility thermally breaks down waste tires in the absence of oxygen through a state of the art pyrolysis process into basic industrial commodities such as carbon black, pyrolysis derived oil and gas and recovers the steel as well. The fire system will be protecting processing area, tire shredding area, employee break room and T.I. areas.

### **Fire Protection Systems and Agents**

Advanced Tek Systems of Nevada LLC is the lead designer of the facility and is integrating state of the art building technologies to include, non-toxic and non-allergenic materials, superior insulation and sound reduction methods, plus a superior fire protection system by Alpha Omega R&D LLC. The fire suppressant agent discharged through the fire protection piping network is a combination of water, nitrogen and EnExa 110 (diluted in the water).

Our design philosophy: A risk-informed, performance-based fire protection plan considers risk insights as well as other factors to better focus attention and resources on design and operational issues according to their importance in safety. This performance-based approach relies on a required outcome rather than requiring a specific process or technique to achieve that outcome. This approach allows the operators to focus their fire protection activities on the areas of greatest risk.

There are multiple phases we will address for fire prevention and protection:

1. Prevention-Minimize the potential for fires and explosions.
2. Suppression-Rapidly Detecting, controlling and extinguishing fires that do occur

3.Safe Shutdown-Ensuring the operators can safely shutdown the pyrolysis units if they don't shutdown automatically by default.

4.Cleanup of catch basins if required

5.Restart of normal operations

**Prevention-**The fixed fire extinguishing system will be located indoors and similar to existing technology in regards to plumbing the pipes. Pressurized cylinder(s) are piped to fog spray nozzles strategically located throughout the building. Automatic Fire detection devices and/or manual devices trigger the release of the agent. The difference is the introduction of a new fire suppressant agent called EnExa 110 which reduces the oxygen and cools the surfaces and creates a thin film to reduce reignition of the surroundings. It could be considered a total flooding application.

The outdoor fire plan for the tire storage area is to treat the tire bales with a retardant called EnExa 110R and use standard and UL listed 2.5 and 5.0 Gallon cylinder fire extinguishers pre-charged with the EnExa 110 suppressant agent. Storage arrangements and clear areas shall be per IFC chapter 25 standards. The tire bales are very tightly compressed and compacted so they do not support combustion as would a loosely stacked (tread or sidewall) arrangement that would allow air entrainment into the fire. Storage will not be sitting idle long enough for precipitation to significantly wash off of the bales. On a side note, the tightly baled storage is a safeguard against water born insects.

EnExa110 has the following advantages over conventional water deluge or foam sprinkler systems:

- 1.Deluge systems don't put out tire fires unless the entire fire area is literally flooded.
- 2.No fire standpipe system is required.
- 3.There is no toxic agent residue to clean up.
- 4.There is no flood damage from water
- 5.It is non-corrosive
- 6.There is no environmental impact.

EnExa 110 and EnExa R have undergone the following tests and certification processes:

- 1.EnExa110 has been tested at the UL Laboratories and meets the NFPA 18 requirement, and EnExa R was tested at the UL Laboratories for the ASTM 84 standards.

**Suppression-**In the event of a fire, the Alarm/detection system will immediately detect the fire which sends a signal to the canister releasing control panel to release the EnExa 110 suppressant.

It initially releases nitrogen followed by the EnExa 110 agent. The nitrogen acts to reduce the oxygen content in the area which feeds the flames. Then The EnExa agent rapidly lowers the temperature below the flame point putting out the flame by using a fine mist system and creating a large surface area to absorb the heat.

**Safe Shutdown-**The GreeNu operators have a control room that monitors all production facility activities and are oriented towards personnel and plant safety. The pyrolysis units come standard with a manufacturer supplied computer that keeps the unit functioning correctly and has a built in algorithm that initiates an automatic shutdown for all known hazards and malfunctions. As a side note, the pyrolysis equipment manufacturer has been producing these pyrolysis units for 12 years and has not had a malfunction requiring an automatic shutdown.

**Cleanup-**The facility will have four catch basins on site to capture any water runoff from the tire storage area. As EnExa is a non-toxic compound, no cleanup is required and any water remaining will evaporate over time.

**Restart-**After the operators have executed their Emergency Action Plan, a controlled system restart procedure is implemented.

## **Fire Codes**

Referenced /Applicable Codes:

- 1 . NFPA 654- STANDARD FOR THE PREVENTION OF FIRE AND DUST EXPLOSIONS FROM THE MANUFACTURING, PROCESSING, AND HANDLING OF COMBUSTIBLE PARTICULATE SOLIDS
- 2 .NFPA 13 chapter 18 (formerly NFPA 231D- Standard for Storage of Rubber Tires )
3. IFC chapter 25-Tire rebuilding and tire Storage



## North Lyon County Fire Protection District

195 East Main Street  
Fernley, Nevada 89408  
District Office (775) 575-3310 District Fax (775) 575-3314

**Directors**  
Debbie Skinner  
Jon Osborn  
Vance Edar  
Ed Heston

**Darryl Cleveland, Fire Chief**

Mr. Kevin Rose  
Greenu Commodities LLC  
11000 Hwy 50  
Fernley, NV 89406

December 4, 2012

Dear Mr. Rose:

The North Lyon County Fire Protection District has reviewed your proposed sight plan and fire mitigation/response plan for storing baled feedstock tires at your plant sight in Fernley. We have found your site plan and storage plan to comply with the International Fire Codes as well as meeting our satisfaction for mitigation/response plan in the event of fire.

Therefore, as the Authority Having Jurisdiction for fire and life safety within North Lyon County and the City of Fernley, and having met the intent and purposes outlined within the International Fire Codes, 2006 edition, for storage of "baled" tires I am approving your request.

If we may be of any further assistance please let us know.

A handwritten signature in black ink, appearing to read "Darryl Cleveland".

Darryl Cleveland, BS, LP  
Fire Chief

**TEAMWORK\*\*INTEGRITY\*\*SERVICE**