May 7, 2010

Oklahoma Department of Mines
Minerals Division
Attn: Mr. Doug Schooley
2915 N. Classen Blvd., Suite 213
Oklahoma City, OK 73106

Re: Non-Coal Mining Application
Arbuckle Aggregates, LLC
Mill Creek Quarry (Johnston County, OK)

Mr. Schooley:

Please let this letter serve as official notice of Arbuckle Aggregates, LLC's (Arbuckle) request to withdraw the Mill Creek Quarry permit application submitted on April 3, 2009. Please do not consider anything related to the original application. An authorized representative will stop by your office to collect the application binders and any related materials.

Arbuckle would like to start the mine permitting process again with a new submittal. Consequently, please find enclosed four copies of an Oklahoma Non-Coal Mining Permit application for Arbuckle's Mill Creek Quarry. As requested, one copy is complete with original signatures. Also find enclosed a check for the $175 application fee (check number 25230).

We greatly appreciate your assistance, patience, and professionalism. Please feel free to contact me with questions or comments.

Sincerely,

Pete Dawson
President

PKD/gac
CC: file
Geoff Canty (EST)

Enclosures

NON-COAL APPLICATION
CHECKLIST FOR APPLICANTS

COMPANY: ARBUCKLE AGGREGATES, LLC

SECTION: 23 & 24 TOWNSHIP: T1S RANGE: R4E COUNTY: JOHNSTON

DOCUMENT	COMPLETE	NOT NEEDED	MAILED TO ODM	DATE
APPLICATION (Section 1)	YES			5/7/2010
LEGAL ESTATE FORM	YES			5/7/2010
PUBLIC NOTIFICATION	(DRAFT FORM)			
COMPLIANCE INFO. FORM (Section 2)	YES			5/7/2010
PROTECTION OF NATURAL RESOURCES & OTHER PERMITS (Section 3)	YES			5/7/2010
BLASTING PLAN	YES			5/7/2010
RECLAMATION PLAN & ATTACHMENTS (Section 4)	YES			5/7/2010
STATEMENT OF CERTIFICATION	YES			5/7/2010
LOCATION MAP (8.5 x 11)	YES			5/7/2010
DETAILED LOCATION MAP (460:10-15-3)	YES			5/7/2010
RECLAMATION BOND (DOCUMENTS)				
PERMIT FEE ($175.00)	YES			5/7/2010

PLEASE MAKE SURE ALL THE ITEMS ABOVE AND THIS SHEET ARE ENCLOSED WITH YOUR APPLICATION

ARE ALL OF THE ABOVE ITEMS INCLUDED? YES ____ NO ____

OKLAHOMA DEPARTMENT OF MINES
MINERALS DIVISION

APPLICATION FOR:

OKLAHOMA NON-COAL MINING PERMIT

PREPARED FOR:

ARBUCKLE AGGREGATES LLC

ARBUCKLE AGGREGATES, LLC

MILL CREEK QUARRY
JOHNSTON COUNTY, OKLAHOMA

PREPARED BY:
EST
3201 S. BERRY ROAD
NORMAN, OK 73072

MAY 2010

1 APPLICATION (Section 1)

2 LEGAL ESTATE FORM

3 PUBLIC NOTIFICATION

4 COMPLIANCE & RELATED INFORMATION (Section 2)

5 NATURAL RESOURCES & OTHER PERMITS (Section 3)

6 BLASTING PLAN

7 RECLAMATION PLAN & ATTACHMENTS (Section 4)

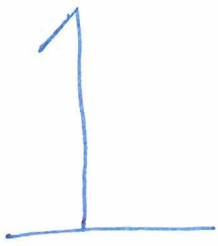
8 STATEMENT OF CERTIFICATION

9 LOCATION MAP(s)

10 RECLAMATION MAP(s)

11 RECLAMATION BOND

12 MISCELLANEOUS



STATE OF OKLAHOMA
DEPARTMENT OF MINES
2915 N. CLASSEN, SUITE 213
OKLAHOMA CITY, OKLA. 73106

RETURN ALL COPIES

APPLICATION FOR PERMIT TO ENGAGE IN NON-COAL MINING

The Mining Lands Reclamation Act, 45 O.S., 1981 721-728

(Section 1)

OFFICE USE ONLY	
PERMIT NUMBER	
PERMIT PERIOD	to

Date May 7, 2010

Number of years for which Permit plan is requested: Life of mine

Arbuckle Aggregates, LLC — 214-733-7165

Name of Company, Corporation, Partnership, Individual — Telephone Number

5020 Tennyson Parkway — Plano — TX — 75024

Street, R.F.D., Box No. — City — State — Zip Code

hereby make application for a permit to mine Limestone, Dolomite, Shale, Sand, Gravel, Clay, & Soil by the following method:

Type of Mineral(s)

UNDERGROUND _____ SURFACE xxx

Specify Method: Auger Mining ____ Dredging ____ Hydraulic Mining

Pumping ____ Quarrying xxx Stripping xxx

Other _____

Mine Name or Number Mill Creek Quarry Nearest Town Mill Creek

Section Parts of 23 & 24 Township 1S Range 4EIM County Johnston

Section _____ Township _____ Range _____ County _____

Type of perimeter markers to be used: Steel tee-posts with PVC pipe sheaths

OPERATIONAL SECTION

A. EXISTING OPERATION

1. Acres disturbed under previous permit(s), not reclaimed and released None

ODM permit number acreage was disturbed under None

This acreage must include the areas of mine excavation(s), processing plants, haulroads, stockpiles and any refuse/waste areas or tailing ponds.

2. Additional acres that will be affected: (Incremental Mining Plan)

Current Year	Estimate Acreage
1st Year.....	None
2nd Year.....	
3rd Year.....	
4th Year.....	
5th Year.....	

(Over five years, please attach separate schedule)

3. Total acreage to be affected for this mining plan None

Total Permit Area

B. NEW OPERATION: An operation currently not under permit:

Number of new acres that will be affected 575

This acreage must include the proposed mine excavation(s), processing plants, haul roads, stockpiles, and any refuse/waste areas or tailing ponds.

C. PURCHASE AND/OR TRANSFER OF EXISTING OPERATION:

If an operation was purchased which will be permitted, give name of previous Owner and Company.

Name of Company: None

Oklahoma Department of Mines Permit number: None

Acreage covered by permit: None

Will additional acreage be affected? None Yes ____ No

If yes, then please complete **(2)** found under **Section A.**

TOTAL ESTIMATED ACRES TO BE COVERED BY PERMIT AND BOND

Will you file a bond covering all your mining acreage under your plan or will you file for an incremental mining plan?

Total Permit Area No Incremental Bonding Yes

Please show your acreage below. If you have indicated incremental mining plan, then your acreage will be progressive as each permit period comes to term. Prior to the issuance of this permit, your maps must show the sequence proposed for incremental bonding for the term of this permit.

	Current Year	Est. Acreage	Permit Period		Bond Coverage
Phase 1	2010 - LOM	305	From 2010	to LOM/LOR	$ $500 x 305 ac = $152,500
Phase 2	TBA	TBA	TBA	TBA	$ TBA
Phase 3	TBA	TBA	TBA	TBA	$ TBA
Phase 4	TBA	TBA	TBA	TBA	$ TBA
Phase 5	TBA	TBA	TBA	TBA	$ TBA

Will there be an acreage increase after 5 years? TBA Yes _____ No

1: LOM = Life of Mine
2: LOR = Life of Reserve
3: TBA = To Be Announced

If yes, then please attach separate schedule for each additional year.

TOTAL ESTIMATED ACREAGE TO BE COVERED BY PERMIT: 575

The Department shall determine REQUIRED BOND, Minimum bond shall be $2,000.00.

Type: Surety xxx Cash _____ Cashier's Check _____ Certificate of Deposit _____

Letter of Credit _____ Other _____

Bond Number Identification: _____

Amount of Bond Coverage $ 152,500

STATEMENT OF CERTIFICATION

I, (Company Official) Pete Dawson Certify that the (Company, Corporation, Individual(s) Arbuckle Aggregates, LLC has the right and power by Legal Estate owned to mine the land for which this application is made. We hereby certify that all details contained in this Permit Application are true and correct to the best of knowledge. We fully understand that any willful misrepresentation of facts will be cause for permit revocation.

Signature of Company Official _____ Position President

Subscribed and sworn to before me this 6th day of May 2010

My Commission expires 4/8/14 Notary Public _____

MENDY A. MCCANN
Notary Public, State of Texas
My Commission Expires
April 08, 2014

Note: THIS APPLICATION MUST BE SIGNED AND NOTARIZED. ALL QUESTIONS MUST BE ADDRESSED AND ALL REQUIRED DOCUMENTS AND INFORMATION PROVIDED BEFORE THIS APPLICATION CAN BE CONSIDERED COMPLETE. ATTACH ADDITIONAL SHEETS AS NEEDED.

LEGAL ESTATE

Name of Landowner: Arbuckle Aggregates, LLC

Address: 5020 Tennyson Parkway, Plano, TX 75024

Telephone No.: 214-733-7165

Section Parts of 23 & 24 Township 1S Range 4EIM County Johnston

Is the permit application area owned xxx or leased _____ by the applicant.

If more than one landowner is involved, please attach a separate sheet with the additional information.

Please provide evidence of your Legal Estate such as a copy of your lease agreement or deed. ***Please see attached deeds

NOTE: NOTHING IN THIS SECTION SHALL BE CONSTRUED TO AFFORD THE DEPARTMENT OF MINES AND MINING AUTHORITY TO ADJUDICATE PROPERTY TITLE DISPUTES.

PUBLIC NOTIFICATION

A copy of your application will need to be available at the County Courthouse or other approved location for public inspection. This location must be disclosed in the public notice. Please give the name and address of the County Courthouse below.

County Courthouse address: JOHNSTON COUNTY COURTHOUSE

403 WEST MAIN, SUITE 102, TISHOMINGO, OK 73460 (580) 371-3281

Submit under separate cover a copy of the Public Notice and the Publishers Affidavit or other Proof of Publication as required by Title 45 §724 G. 1. a. & b. (1) thru (6). **THIS NOTICE MUST NOT BE PUBLISHED UNTIL THE APPLICATION HAS BEEN RULED COMPLETE BY THE DEPARTMENT AND MADE AVAILABLE FOR PUBLIC INSPECTION.**

I-2008-005319 Book 0259 Pg 92
12/01/2008 9:48 am Pg 0092-0094
Fee: $ 17.00 Doc: $ 377.25
Kathy Ross - Johnston County Clerk
State of Oklahoma

WARRANTY DEED

This DEED is made this 25 day of November, 2008, among **Roger Kite and Ernestine Kite**, husband and wife, (collectively, "Grantors") and **Arbuckle Aggregates, LLC**, a Texas limited liability company ("Grantee") of 6831 Ash Street, Frisco, Texas 75034. The Grantors, in consideration of the sum of TEN and NO/100THS DOLLARS ($10.00) and other good and valuable consideration duly paid, the receipt of which is acknowledged, do grant, bargain, sell and convey unto the Grantee, its successors and assigns, all that certain described real property, situated in Johnston County, State of Oklahoma, and described in Exhibit A attached hereto and made a part hereof for all purposes (the "Land"), together with (i) any improvements situated thereon, (ii) any and all rights and appurtenances belonging or pertaining thereto, (iii) all rights, title and interests of Seller in and to any easements, leases, rights-of-way, rights of ingress or egress or other interests in, on or to any land, highway, street, road or avenue, open or proposed, in, on, in front of, abutting, adjoining or benefiting the Property and improvements, (iv) all rights, title and interests of Seller in and to surface and groundwater water for the Property and improvements, and (v) all rights, title and interests of Seller in and to any and all mineral interests of whatever nature, producing or non-producing, relating to such Land, including, but not limited to, rights of Seller under any and all oil and gas leases covering said Land. All of the Land, improvements, rights, title, interests and appurtenances described above shall hereinafter be referred to as the "Property", and Grantors warrant the title to the same.

TO HAVE AND HOLD the described premises to the Grantee, the Grantee's successors and assigns forever, free and discharged of all former grants, charges, taxes, judgments, mortgages, and other liens and encumbrances of whatsoever nature or kind; subject only to the Permitted Exceptions attached as Exhibit B hereto.

Executed on the day and year written above.

Roger Kite

Ernestine Kite

STATE OF OKLAHOMA)
) ss.
COUNTY OF JOHNSTON)

This instrument was acknowledged before me on November 25, 2008 by Roger and Ernestine Kite, husband and wife.

Notary Public

My Commission Expires:

SEAL

LISA POLLARD
NOTARY
02016457
EXP. 10/07/10
PUBLIC
STATE OF OKLAHOMA

Documentary Stamps $_____

I-2008-005319 Book 0259 Pg 93
12/01/2008 9 48 am Pg 0092-0094
Fee $ 17 00 Doc $ 377 25
Kathy Ross - Johnston County Clerk
State of Oklahoma

EXHIBIT A

All that part of the SE/4 NW/4 lying and being situated East of the St. Louis, Oklahoma and Southern Railway, of Section 24, Township 1 South, Range 4 East of the Indian Base and Meridian. AND ALL that part of the S/2 of Section 24, lying East of the Right-of-Way of the St. Louis and San Francisco Railway Co., in Township 1 South, Range 4 East of the Indian Base and Meridian, all in Johnston County, Oklahoma.

Above described property containing 167.49 acres more or less

I-2008-005319 Book 0259 Pg: 94
12/01/2008 9:48 am Pg 0092-0094
Fee. $ 17.00 Doc. $ 377.25
Kathy Ross - Johnston County Clerk
State of Oklahoma

EXHIBIT B

Permitted Exceptions

1. Dedication Deed recorded in Book 61, Page 577 as shown on survey prepared by Eric Shane King, R.P.L.S. No. 1542 of EST Engineering Services and Testing, Inc., dated August 26. 2008 under Project Number 0800116.

2. Dedication Deed recorded in Book 61, Page 578 as shown on survey prepared by Eric Shane King, R.P.L.S. No. 1542 of EST Engineering Services and Testing, Inc., dated August 26, 2008 under Project Number 0800116.

'009-002060 Book 0267 Pg 542
./24/2009 2:20 pm Pg 0542-0546
Fee: $ 21.00 Doc: $ 522.75
Kathy Ross - Johnston County Clerk
State of Oklahoma

WARRANTY DEED AND MINERAL CONVEYANCE

This DEED is made this 20th day of August, 2009, among Aileen Holder Ferguson, (a.k.a. Aileen Holder Bizzell), a single woman, and Bobby Jay Taylor and Kimberly Sue Taylor, husband and wife (and collectively, "Grantor") and Arbuckle Aggregates, LLC, a Texas limited liability company ("Grantee") of 6831 Ash Street, Frisco, Texas 75034. The Grantor, in consideration of the sum of TEN and NO/100THS DOLLARS ($10.00) and other good and valuable consideration duly paid, the receipt and sufficiency of which is hereby acknowledged, does grant, bargain, sell and convey unto the Grantee, its successors and assigns, all that certain described real property, situated in Johnston County, State of Oklahoma, and described on **Exhibit A** attached hereto and made a part hereof for all purposes (the "Land"), together with (i) any improvements situated thereon, (ii) any and all rights and appurtenances belonging or pertaining thereto, (iii) all rights, title and interests of Grantor in and to any easements, leases, rights-of-way, rights of ingress or egress or other interests in, on or to any land, highway, street, road or avenue, open or proposed, in, on, in front of, abutting, adjoining or benefiting the Land and improvements thereto, (iv) all rights, title and interests of Grantor in and to surface and groundwater water for the Land and improvements thereto, and (v) all rights, title and interests of Grantor in and to any and all mineral interests of whatever nature, producing or non-producing, relating to such Land, including, but not limited to, rights of Grantor under any and all oil and gas leases covering said Land. All of the Land, improvements, rights, title, interests and appurtenances described above shall hereinafter be referred to as the "Property", and Grantor warrants the title to the same.

TO HAVE AND HOLD the described premises to the Grantee, the Grantee's successors and assigns forever, free and discharged of all former grants, charges, taxes, judgments, mortgages, and other liens and encumbrances of whatsoever nature or kind; subject only to the exceptions set forth on **Exhibit B** attached hereto and made a part hereof for all purposes (the "Permitted Exceptions").

Executed as of the date set forth below to be effective on the day and year first written above.

[SIGNATURE PAGE FOLLOWS]

2009-002060 Book 0267 Pg 543
8/24/2009 2:20 pm Pg 0542-0546
Fee $ 21.00 Doc $ 522 75
Kathy Ross - Johnston County Clerk
State of Oklahoma

GRANTOR:

Aileen Holder Ferguson
(a.k.a. Aileen Holder Bizzell)

Bobby Jay Taylor

Kimberly Sue Taylor

STATE OF OKLAHOMA)
) ss.
COUNTY OF ~~JOHNSTON~~ Carter)

This instrument was acknowledged before me on August 20, 2009 by Aileen Holder Ferguson (a.k.a. Aileen Holder Bizzell), a single woman.

Notary Public

My Commission Expires:

10-7-2010
SEAL

STATE OF OKLAHOMA)
) ss.
COUNTY OF ~~JOHNSTON~~ Carter)

This instrument was acknowledged before me on August 20, 2009 by Bobby Jay Taylor, a married man.

Notary Public

My Commission Expires:

10-7-2010
SEAL

I-2009-002060 Book 0267 Pg: 544
08/24/2009 2:20 pm Pg 0542-0546
Fee: $ 21 00 Doc: $ 522 75
Kathy Ross - Johnston County Clerk
State of Oklahoma

STATE OF OKLAHOMA)
) ss.
COUNTY OF ~~JOHNSTON~~ Carter)

This instrument was acknowledged before me on August 20, 2009 by Kimberly Sue Taylor, a married woman.

Lisa Pollard
Notary Public

LISA POLLARD
NOTARY PUBLIC
#02016457
EXP. 10/07/10
STATE OF OKLAHOMA

I-2009-002060 Book 0267 Pg: 545
08/24/2009 2 20 pm Pg 0542-0546
Fee: $ 21.00 Doc. $ 522.75
Kathy Ross - Johnston County Clerk
State of Oklahoma

EXHIBIT A

All that part of the E/2 of the SW/4 and all that part of the W/2 of the SE/4, lying and being West of the Right-of-Way of the St. Louis, Oklahoma and southern Railway Company, in Section 24, Township 1 South, Range 4 East of the Base Line and Indian Meridian, in Johnston County, Oklahoma.

I-2009-002060 Book 0267 Pg. 546
08/24/2009 2:20 pm Pg 0542-0546
Fee $ 21.00 Doc. $ 522 75
Kathy Ross - Johnston County Clerk
State of Oklahoma

EXHIBIT B

PERMITTED EXCEPTIONS

Statutory right of way along section lines, as shown on survey prepared by Eric Shane King, R.P.L.S. No. 1542 of EST Engineering Services and Testing, Inc., dated January 7, 2009 under Project Number 0800117.

2. Ad valorem taxes for 2009, the amount of which is not yet ascertainable, due or payable.

2009-002062 Book 0267 Pg 550
08/24/2009 2:32 pm Pg 0550-0553
Fee: $ 19.00 Doc: $ 1,786.50
Kathy Ross - Johnston County Clerk
State of Oklahoma

WARRANTY DEED AND MINERAL CONVEYANCE

This DEED is made this 20th day of August, 2009, among George P. Holder (a.k.a. G.P. Holder, a.k.a. G.P. Holder, Jr.), a single man ("Grantor") and Arbuckle Aggregates, LLC, a Texas limited liability company ("Grantee") of 6831 Ash Street, Frisco, Texas 75034. The Grantor, in consideration of the sum of TEN and NO/100THS DOLLARS ($10.00) and other good and valuable consideration duly paid, the receipt and sufficiency of which is hereby acknowledged, does grant, bargain, sell and convey unto the Grantee, its successors and assigns, all that certain described real property, situated in Johnston County, State of Oklahoma, and described on **Exhibit A** attached hereto and made a part hereof for all purposes (the "Land"), together with (i) any improvements situated thereon, (ii) any and all rights and appurtenances belonging or pertaining thereto, (iii) all rights, title and interests of Grantor in and to any easements, leases, rights-of-way, rights of ingress or egress or other interests in, on or to any land, highway, street, road or avenue, open or proposed, in, on, in front of, abutting, adjoining or benefiting the Land and improvements thereto, (iv) all rights, title and interests of Grantor in and to surface and groundwater water for the Land and improvements thereto, and (v) all rights, title and interests of Grantor in and to any and all mineral interests of whatever nature, producing or non-producing, relating to such Land, including, but not limited to, rights of Grantor under any and all oil and gas leases covering said Land. All of the Land, improvements, rights, title, interests and appurtenances described above shall hereinafter be referred to as the "Property", and Grantor warrants the title to the same.

TO HAVE AND HOLD the described premises to the Grantee, the Grantee's successors and assigns forever, free and discharged of all former grants, charges, taxes, judgments, mortgages, and other liens and encumbrances of whatsoever nature or kind; subject only to the exceptions set forth on **Exhibit B** attached hereto and made a part hereof for all purposes (the "Permitted Exceptions").

Executed as of the date set forth below to be effective on the day and year first written above.

[SIGNATURE PAGE FOLLOWS]

I-2009-002062 Book 0267 Pg: 551
08/24/2009 2:32 pm Pg 0550-0553
Fee: $ 19.00 Doc: $ 1,786.50
Kathy Ross - Johnston County Clerk
State of Oklahoma

GRANTOR:

G P Holder

George P. Holder (a.k.a. G.P. Holder, a.k.a. G.P. Holder, Jr.)

STATE OF OKLAHOMA)
CARTER) ss.
COUNTY OF ~~JOHNSTON~~)

This instrument was acknowledged before me on August 20, 2009 by George P. Holder (a.k.a. G.P. Holder, a.k.a. G.P. Holder, Jr.), a single man.

Lisa Pollard

Notary Public

My Commission Expires:

10-7-2010

SEAL

I-2009-002062 Book 0267 Pg: 552
08/24/2009 2:32 pm Pg 0550-0553
Fee: $ 19.00 Doc. $ 1,786.50
Kathy Ross - Johnston County Clerk
State of Oklahoma

EXHIBIT A

The W/2 of the SW/4 and all that part of the S/2 of the NW/4, lying and being West of the Right-of-Way of the St. Louis, Oklahoma and Southern Railway Company, all in Section 24, Township 1 South, Range 4 East of the Base Line and Indian Meridian, in Johnston County, Oklahoma; AND

The S/2 of the SE/4 and the S/2 of the N/2 of the SE/4 and the NE/4 of the NE/4 of the SE/4 in Section 23, Township 1 South, Range 4 East of the Base Line and Indian Meridian, in Johnston County, Oklahoma.

I-2009-002062 Book 0267 Pg 553
08/24/2009 2:32 pm Pg 0550-0553
Fee. $ 19 00 Doc: $ 1,786.50
Kathy Ross - Johnston County Clerk
State of Oklahoma

EXHIBIT B

PERMITTED EXCEPTIONS

Statutory right of way along section as shown on survey prepared by Eric Shane King, R.P.L.S. No. 1542 of EST Engineering Services and Testing, Inc., dated January 7, 2009 under Project Number 0800115 and Project Number 0800117.

Ad valorem taxes for the year 2009 the amount of which is not yet ascertainable, due or payable.

WARRANTY DEED

This DEED is made this 21st day of January, 2010, among THELMA GERALDINE SLAUGHTER and BOBBY DEEN SLAUGHTER, Wife and Husband, ("Grantor") and ARBUCKLE AGGREGATES, LLC, A Texas Limited Liability Company ("Grantee") of 6831 Ash Street, Frisco, Texas 75034. The Grantor, in consideration of the sum of TEN and NO/100THS DOLLARS ($10.00) and other good and valuable consideration duly paid, the receipt of which is acknowledged, does grant, bargain, sell and convey unto the Grantee, its successors and assigns, all that certain described real property, situated in Johnston County, State of Oklahoma, and described in Exhibit A attached hereto and made a part hereof for all purposes (the "Land"), together with (i) any improvements situated thereon, (ii) any and all rights and appurtenances belonging or pertaining thereto, (iii) all rights, title and interests of Grantor in and to any easements, leases, rights-of-way, rights of ingress or egress or other interests in, on or to any land, highway, street, road or avenue, open or proposed, in, on, in front of, abutting, adjoining or benefitting the Property and improvements, (iv) all rights, title and interests of Grantor in and to surface and groundwater water for the Property and improvements, and (v) all rights, title and interests of Grantor in and to any and all mineral interests of whatever nature, producing or non-producing, relating to such Land, including, but not limited to, rights of Grantor under any and all oil and gas leases covering said Land. All of the Land, improvements, rights, title, interests and appurtenances described above shall hereinafter be referred to as the "Property", and Grantor warrants the title to the same.

TO HAVE AND HOLD the described premises to the Grantee, the Grantee's successors and assigns forever, free and discharged of all former grants, charges, taxes, judgments, mortgages, and other liens and encumbrances of whatsoever nature or kind: subject only to the following Permitted Exceptions:

Executed on the day and year written above.

Thelma Geraldine Slaughter — Bobby Dee Slaughter

THELMA GERALDINE SLAUGHTER **BOBBY DEEN SLAUGHTER**

STATE OF OKLAHOMA)
)
COUNTY OF MURRAY)

This instrument was acknowledged before me on January 21st, 2010, by THELMA GERALDINE SLAUGHTER and BOBBY DEEN SLAUGHTER, Wife and Husband.

My Commission Expires:
8-10-2013

Pamela L. Slade
NOTARY PUBLIC

My Commission Number:
01011520

Upon Filing Return to: 8/10/2013

EXHIBIT "A"

TRACT B:

ALL THAT PART OF THE N/2 OF NW/4 OF SECTION 24, TOWNSHIP 1 SOUTH, RANGE 4 EAST, JOHNSTON COUNTY, OKLAHOMA, LYING EAST OF THE ST. LOUIS AND SAN FRANCISCO RAILWAY RIGHT-OF-WAY, LESS AND EXCEPT ALL OIL, GAS AND OTHER MINERALS.

LESS AND EXCEPT:

THAT STRIP OF RIGHT-OF-WAY LYING BETWEEN THE EAST RIGHT-OF-WAY LINE OF THE BURLINGTON NORTHERN AND SANTA FE RAILROAD, AND THE EAST RIGHT-OF-WAY LINE OF HIGHWAY 1/7 AS SHOWN ON STATE OF OKLAHOMA HIGHWAY PLANS FOR FEDERAL AID PROJECT NUMBER F-366(3).

SAID PROPERTY FURTHER DESCRIBED AS FOLLOWS:

A TRACT OF LAND IN THE N/2 OF THE NW/4 OF SECTION 24, TOWNSHIP 1 SOUTH, RANGE 4 EAST, JOHNSTON COUNTY, OKLAHOMA, DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF SAID N/2 OF NW/4, THENCE S 00°01'33" W ALONG THE EAST LINE THEREOF, 1323.72 FEET TO A POINT ON THE SOUTH LINE OF SAID N/2 OF NW/4; THENCE S 89°59'31" W ALONG SAID SOUTH LINE 882.43 FEET TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF STATE HIGHWAY 1/7; THENCE NORTHWESTERLY ALONG SAID RIGHT-OF-WAY LINE ON THE FOLLOWING COURSES: N 19°09'48" W, 437.57 FEET; NORTHWESTERLY ON A CURVE TO THE RIGHT HAVING A RADIUS OF 2704.79 FEET WITH AN ARC LENGTH OF 733.62 FEET AND A CHORD BEARING OF N 11°23'36" W, WHOSE CHORD LENGTH IS 731.37 FEET; N 03°37'23" W 194.06 FEET TO THE NORTH LINE OF SAID N/2 OF NW/4; THENCE S 89°59'43" E ALONG THE NORTH LINE THEREOF, 1183.40 FEET TO THE POINT OF BEGINNING.

WARRANTY DEED

This DEED is made this 21st day of January, 2010, among THELMA GERALDINE SLAUGHTER and BOBBY DEEN SLAUGHTER, Wife and Husband, ("Grantor") and ARBUCKLE AGGREGATES, LLC, A Texas Limited Liability Company ("Grantee") of 6831 Ash Street, Frisco, Texas 75034. The Grantor, in consideration of the sum of TEN and NO/100THS DOLLARS ($10.00) and other good and valuable consideration duly paid, the receipt of which is acknowledged, does grant, bargain, sell and convey unto the Grantee, its successors and assigns, all that certain described real property, situated in Johnston County, State of Oklahoma, and described in Exhibit A attached hereto and made a part hereof for all purposes (the "Land"), together with (i) any improvements situated thereon, (ii) any and all rights and appurtenances belonging or pertaining thereto, (iii) all rights, title and interests of Grantor in and to any easements, leases, rights-of-way, rights of ingress or egress or other interests in, on or to any land, highway, street, road or avenue, open or proposed, in, on, in front of, abutting, adjoining or benefitting the Property and improvements, (iv) all rights, title and interests of Grantor in and to surface and groundwater water for the Property and improvements, and (v) all rights, title and interests of Grantor in and to any and all mineral interests of whatever nature, producing or non-producing, relating to such Land, including, but not limited to, rights of Grantor under any and all oil and gas leases covering said Land. All of the Land, improvements, rights, title, interests and appurtenances described above shall hereinafter be referred to as the "Property", and Grantor warrants the title to the same.

TO HAVE AND HOLD the described premises to the Grantee, the Grantee's successors and assigns forever, free and discharged of all former grants, charges, taxes, judgments, mortgages, and other liens and encumbrances of whatsoever nature or kind: subject only to the following Permitted Exceptions:

Executed on the day and year written above.

THELMA GERALDINE SLAUGHTER

BOBBY DEEN SLAUGHTER

STATE OF OKLAHOMA)
)
COUNTY OF MURRAY)

This instrument was acknowledged before me on January 21st, 2010, by THELMA GERALDINE SLAUGHTER and BOBBY DEEN SLAUGHTER, Wife and Husband.

My Commission Expires:
8/10/2013

NOTARY PUBLIC

My Commission Number:
01011520

Upon Filing Return to:

8-10-2013

EXHIBIT "A"

TRACT A:

ALL THAT PART OF THE N/2 OF NW/4 OF SECTION 24, TOWNSHIP 1 SOUTH, RANGE 4 EAST, JOHNSTON COUNTY, OKLAHOMA, LYING WEST OF THE ST. LOUIS & SAN FRANCISCO RAILWAY RIGHT-OF-WAY, LESS AND EXCEPT ALL OIL, GAS AND OTHER MINERALS. SAID PROPERTY FURTHER DESCRIBED AS FOLLOWS:
A TRACT OF LAND IN THE N/2 OF THE NW/4 OF SECTION 24, TOWNSHIP 1 SOUTH, RANGE 4 EAST, JOHNSTON COUNTY, OKLAHOMA DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF SAID N/2 OF THE NW/4; THENCE S 89°59'43" E ALONG THE NORTH LINE THEREOF, 1246.15 FEET TO A POINT ON THE WEST RIGHT-OF-WAY LINE OF THE BURLINGTON NORTHERN AND SANTA FE RAILROAD; THENCE SOUTHEASTERLY ALONG SAID RIGHT-OF-WAY LINE ON THE FOLLOWING COURSES; S 03°37'23" E, 207.37 FEET, SOUTHEASTERLY ON A CURVE TO THE LEFT, HAVING A RADIUS OF 2914.79 FEET WITH AN ARC LENGTH OF 790.57 FEET AND A CHORD BEARING OF S 11°23'36" E WHOSE CHORD LENGTH IS 788.15 FEET; THENCE S 19°09'48" E, 364.62 FEET TO A POINT ON THE SOUTH LINE OF SAID N/2 OF NW/4; THENCE S 89°59'31" W ALONG SAID SOUTH LINE, 1535.28 FEET TO THE SOUTHWEST CORNER OF SAID N/2 OF NW/4; THENCE N 00°01'40" E ALONG THE WEST LINE THEREOF, 1324.31 FEET TO THE POINT OF BEGINNING.

PUBLIC NOTIFICATION

Upon approval from ODM, the following information will be published in the local paper—Johnston County Capital-Democrat (PO Box 400, Tishomingo, OK 73460, (580)371-2356). The Public Notice must run for four consecutive weeks. A copy of the Public Notice (listed below) and the Publisher's Affidavit or other proof of publication must be submitted to the ODM.

THIS NOTICE CANNOT BE PUBLISHED UNTIL THE ODM HAS DETERMINED THE APPLICATION TO BE ADMINISTRATIVELY COMPLETE AND AVAILABLE FOR PUBLIC INSPECTION.

PUBLIC NOTICE

Arbuckle Aggregates, LLC (5020 Tennyson Parkway, Plano, Texas 75024) has submitted a permit application to the Oklahoma Department of Mines (ODM) to mine limestone and other minerals and materials through the surface mining method on portions of the following parcels of land:

All that part of the SE¼ NW¼ lying and being situated East of the St. Louis, Oklahoma, and Southern Railway, of Section 24-T1S-R4EIM. And all that part of the S½ of Section 24 T1S-R4EIM, lying East of the Right-of-Way of the St. Louis and San Francisco Railway Co.

All that part of the E½ of the SW¼ and all that part of the W½ of the SE¼, lying and being West of the right-of-way of the St. Louis, Oklahoma and Southern Railway Company, in Section 24-T1S-R4EIM.

The W½ of the SW¼ and all that part of the S½ of the NW¼, lying and being West of the right-of-way of the St. Louis, Oklahoma, and Southern Railway Company, all in Section 24-T1S-R4EIM.

The S½ of the SE¼ and the S½ of the N½ of the SE¼ and the NE¼ of the NE¼ of the SE¼ of Section 23-T1S-R4EIM.

All that part of the SE ¼ NW ¼ lying and being situated East of the St. Louis, Oklahoma, and Southern Railway, of Section 24-T1S-R4EIM. AND ALL that part of the S ½ of Section 24, lying East of the right-of-way of the St. Louis and San Francisco Railway Co in T1S, R4EIM.

All that part of the N½ of NW¼ of Section 24-T1S-R4EIM, Johnston County, Oklahoma, lying west of the St. Louis & San Francisco railway right-of-way, less and except all oil, gas and other minerals. Said property further described as follows: a tract of land in the N½ of the NW ¼ of Section 24-T1S-R4EIM, Johnston County, Oklahoma described as follows: beginning at the northwest corner of said N½ of the NW¼; thence S 89°59'43" E along the north line thereof, 1246.15 feet to a point on the west right-of-way line of the Burlington Northern and Santa Fe Railroad; thence southeasterly along said right -of-way line on the following courses; S 03°37'23" E, 207.37 feet, southeasterly on a curve to the left, having a radius of 2914.79 feet with an arc length of 790.57 feet and a chord bearing of S 11°23'36" E whose chord length is 788.15 feet; thence S 19°09'48" E, 364.62 feet to a point on the south line of said N½ of NW¼ ; thence S 89° 59'31" W along said south line, 1535.28 feet to the southwest corner of said N½ of NW¼; thence N 00°01 '40" E along the west line thereof, 1324.31 feet to the point of beginning.

All that part of the N½ of NW ¼ of Section 24T-T1S-R4EIM, Johnston County, Oklahoma, lying east of the St. Louis and San Francisco Railway right-of-way, less and except all oil, gas and other minerals. Less and except: that strip of right -of-way lying between the east right-of-way line of the Burlington Northern and Santa Fe Railroad, and the east right-of-way line of Highway 1/7 as shown on State of Oklahoma Highway Plans for federal aid project number F-366(3). Said property further described as follows: A tract of land in the N ½ of the NW ¼ of Section 24-T1S-R4EIM, Johnston County, Oklahoma, described as follows: beginning at the northeast corner of

said N½ of NW ¼, thence S 00°01'33" W along the east line thereof, 1323.72 feet to a point on the south line of said N½ of NW¼; thence S 89°59'31" W along said south line 882.43 feet to a point on the east right-of-way line of State Highway 1/7; thence northwesterly along said right-of-way line on the following courses: N 19°09'48" W, 437.57 feet; northwesterly on a curve to the right having a radius of 2704.79 feet with an arc length of 733.62 feet and a chord bearing of N 11°23'36" W, whose chord length is 731.37 feet; N 03°37'23" W 194.06 feet to the north line of said N½ of NW¼; thence S 89°59'43" E along the north line thereof, 1183.40 feet to the point of beginning.

The total permit area, containing 575 acres more or less, is located in the Mill Creek USGS 7.5 Minute Quadrangle map. The permit site is located approximately 3 miles north of the town of Mill Creek.

A copy of this complete permit application is available for public inspection and copying at the Johnston County Courthouse in Tishomingo, Oklahoma.

Upon written request to the Oklahoma Department of Mines, information contained in the permit application may be inspected or copied at the Department of Mines. Any landowner or resident of any occupied dwelling within one (1) mile of the proposed site or any public entity or public agency has the right to submit comments or object to the issuance of the permit in writing. **A public hearing will be provided for qualified protestors if a hearing is specifically requested in writing.** Any written objections or requests for a hearing on this application must be received no later than fourteen (14) days after the fourth and final publication of this notice to the.

OKLAHOMA DEPARTMENT OF MINES
2915 NORTH CLASSEN BLVD., SUITE 213
OKLAHOMA CITY, OK 73106

DEPARTMENT OF MINES
2915 N. CLASSEN BLVD. SUITE 213
OKLAHOMA CITY, OKLA. 73106
405/427-3859

OKLAHOMA APPLICATION FOR A NON-COAL MINING PERMIT
Compliance and Related Information
(Section 2)

Date May 7, 2010

Arbuckle Aggregates, LLC				Mill Creek Quarry
Name of Company				Mine Name or No.
5020 Tennyson Parkway		Plano	TX	75024
Company Address	Street, RFD or Box	City	State	Zip Code

NOTE: ANSWER ALL QUESTIONS ON THIS FORM. (If no answer, write "NONE").
PROPERLY IDENTIFY AND SECURE ANY ATTACHED EXHIBITS, IF USED.
PLEASE REFER TO THE SPECIFIC ITEM NUMBER OF THIS FORM.

IDENTIFICATION OF INTERESTS. In compliance with Section 460:10-11-5 of the Rules and Regulations for Non-Coal Surface Mining and Reclamation, the APPLICANT is required to furnish the following:

460:10-11-5(b)

1a. Applicant is an Individual or Single Proprietorship ( ) If yes, provide Social Security # _____

1b. Applicant is a: Corporation ( ) Joint Venture ( ) Partnership (x) Other LLC

2. Please provide the names of every officer, partner, director, or other person performing similar to director of the applicant

Name	Address	City	State	Zip	Position
Peter Dawson	5020 Tennyson Prkway	Plano	TX	75024	President
Rod Vilhauer	same as above				Vice President
Barry Rich	same as above				Vice President
None					

460:10-11-5(c)

3. Did the applicant, partner, or corporation or subsidiary of, operate a non-coal surface mining operation in the State of Oklahoma within the five (5) years preceding the date of the application?_____Yes_xxx___ No

If yes, answer the following:

None

Name of Mine	City	County	Legal Location of Mine	Permit #

None

Name of Mine	City	County	Legal Location of Mine	Permit #

None

Name of Mine	City	County	Legal Location of Mine	Permit #

None

Name of Mine	City	County	Legal Location of Mine	Permit #

Please include any additional mining operations on a separate sheet.

COMPLIANCE INFORMATION

460:10-11-6(1)

1. Has the applicant for the permit, or any subsidiary, affiliate or by or under common control with the applicant:

460:10-11-6(1)(A)

1a. Had a federal or state mining permit suspended or revoked in the last five (5) years? Yes xxx No

460:10-11-6(1)(B)

1b. Forfeited a mining bond or similar security deposited in lieu of bond? Yes xxx No

460:10-11-6(2)

2. If the answer to either 1a or 1b above was yes, applicant should provide the following information:

460:10-11-6(2)(A)

2a. Permit Identification # None , or Amount of bond $ None

460:10-11-6(2)(A)

2b. Provide the name of the authority that suspended or revoked a permit or forfeited a bond:

None

Provide the reason for such action:

None

None

460:10-11-6(2)(B)

2c. What is the current status of the permit, bond or similar security involved?

None

None

460:10-11-6(2)(C)

2d. Provide the date, location and type of any administrative or judicial proceedings initiated concerning the suspension, revocation or forfeiture:

None

Date Location Type

460:10-11-6(2)(D)

2e. What is the current status of these proceedings? None

DEQ PW App

COE NW14

OWRB Hancock Sec 33

OWRB Section 23

DEQ ~~SW~~ Stormwater NO1

DEPARTMENT OF MINES
2915 N. CLASSEN, SUITE 213
OKLAHOMA CITY, OKLA. 73106
405/427-3859

OKLAHOMA APPLICATION FOR A NON-COAL MINING PERMIT
Protection of Natural Resources
(Section 3)

1. Will the operation involve crushing or any other air contaminant emissions?

   Yes xxx No _____

If you indicated yes, please be advised that a permit may be required from the Air Quality Division of the Oklahoma Department of Environmental Quality. Please contact the agency for their respective requirements.

2. Will explosives be used? Yes xxx No _____

If yes, review the enclosed Blasting Regulations and complete the enclosed Blasting Plan. Said plan should accompany the application upon submission. If a Blasting Plan does not accompany the application and explosives will be used, then a permit will <u>not</u> be issued until a plan is secured.

3. a. Will the operation involve washing the material mined, recycling processed water or other waste water handling?

   Yes xxx No _____

   b. Will the operation involve dewatering the mine or discharging fresh or waste water from the mine or plant?

   Yes xxx No _____

   c. Does this operation fall within the jurisdictional requirements of the stormwater regulations of the Oklahoma Department of Environmental Quality?

   Yes xxx No _____

If you indicated yes to either 3a, 3b, or 3c, please be advised that a permit may be required from either the Department of Environmental Quality, Oklahoma Water Resources Board or the Army Corps of Engineers. Please contact each agency for its respective requirements.

4. Will the operation involve removing minerals from within any boundaries of river or streambed?

Yes _____ No xxx

If you indicated yes, please complete the following questions regarding the type of stream and its name and location. If you indicated no, please proceed to Section 4.

a. What is the name of the stream or river? None

b. Which of the following classifies this stream or river? Please refer to OAC 460:10-13-2 for descriptions of each.

_____ High Quality Water (HQW)
_____ Outstanding resources waters (ORW)
_____ Scenic river area
xxx None of the above

Please note: Certain permitting and operating procedures are required for mining permits in these environmental areas. Please refer to 460:10-13-3 for the requirements.

NOTICE: FAILURE TO ANSWER THE ABOVE QUESTIONS ACCURATELY AND TRUTHFULLY MAY BE GROUNDS FOR PERMIT SUSPENSION OR REVOCATION.

OTHER LICENSES AND PERMITS

6. Has any other agency, local, state, or federal, been contacted to ascertain the need for other licenses and permits with respect to this operation?

Yes xxx No _____

Please refer to the *Non-Coal Permitting Guidelines and Summary* and the Notice below regarding other possible governing entities that may need to be contacted. Provide a list of all other licenses and permits needed for this mining operation. If a license or permit has been issued, please provide the Permit Identification Number and date of Approval or a copy of said permit or license. (Title 45 § 724 I.) If a permit or license is pending, please provide copies of your applications or Notices of Intent (N.O.I.) that have been submitted to other agencies.

AGENCY	IDENTIFICATION NUMBER	DATE OF APPROVAL
Department of Environmental Quality	Air Permit NMPF-GP Construction	2009-105-NOI Issued 4/22/09
Department of Environmental Quality	Storm Water Construction Permit Authorization	Updated NOI OKR1010501 Issued 9/4/09; submitted 5/7/10
Department of Environmental Quality	OPDES General Permit (OKG950000)	Modification OKG950048 Issued 5/22/09; submitted 5/7/10
US Army Corps of Engineers	Nationwide Permit #14	Updated request 2009-273 Issued 4/30/09; submitted 5/7/10
Oklahoma Department of Transportation	State HWY 1/7 Access	Conditional Approval Letter 12/14/09
Oklahoma Water Resources Board	Surface Water Permit (Sect 33, T1S R4E)	Application Submitted 5/7/10
Oklahoma Water Resources Board	Surface Water Permit (Sect 23, T1S R4E)	Application Submitted 5/7/10

1) Note: The Applicant's stone products will be processed with water, including but not limited to, surface water and any other source legally permissible pursuant to Oklahoma State Law and/or Federal Law. Applicable permits will be obtained when necessary and/or when required OWRB surface water permits and an OPDES permit authorization are pending.

NOTICE: A SPECIAL PERMIT TO OPERATE WITHIN CERTAIN MUNICIPALITIES OR COUNTIES MAY BE REQUIRED. IT IS THE RESPONSIBILITY OF EACH APPLICANT TO CONTACT THE APPROPRIATE CITY OR COUNTY OFFICIALS TO DETERMINE IF THE MINING OPERATION FALLS WITHIN THEIR RESPECTIVE JURISDICTION.

IF POSSIBLE, PLEASE PROVIDE A COPY OF ANY APPROVED LICENSE OR PERMIT.

STEVEN A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

BRAD HENRY
Governor

APR 2 2009

Arbuckle Aggregates, LLC
Attn: Pete Dawson
6831 Ash St.
Frisco, TX 75034

NOI Number: **2009-105-NOI**
Permit Writer: Constance Burris

SUBJECT: GP-NMPF Authorization to Construct
Facility: Mill Creek Quarry
Location: Johnston County, OK
Date Received: April 3, 2009

Dear Mr. Dawson:

The Air Quality Division has received your Notice of Intent (NOI) to construct the referenced facility in accordance with conditions established in the General Permit for Nonmetallic Mineral Processing Facilities (GP-NMPF), issued on May 9, 2000. It has been given the NOI number referenced above. The fee for this NOI is $400 and $400 has been received. AQD hereby acknowledges receipt of a complete application, and you are authorized upon receipt of the NOI to construct and operate the facility in accordance with the GP-NMPF (copy enclosed).

Note that you must submit a completed application for an Authorization to Operate, i.e., DEQ Forms #100-330, within 60 days of commencing operation of the proposed facility. A copy of the application packet for the GP-NMPF is available on the DEQ website at http://www.deq.state.ok.us. Upon submittal of a complete application ODEQ will conduct an inspection of the facility and issue the Operating Permit.

Thank you for your cooperation. If you have any questions, please refer to the NOI number above and contact Constance Burris at (405) 702-4209.

Sincerely,

Phillip Fielder, P.E.,
Permits and Engineering Group Manager
AIR QUALITY DIVISION

Enclosure: General Permit for Nonmetallic Mineral Processing Facilities

Oklahoma Department of Environmental Quality
Authorization to Discharge Under the OPDES Storm Water Construction General Permit OKR10

AUTHORIZATION NO. **OKR1010501**

In compliance with the Oklahoma Pollution Discharge Elimination System (OPDES) Act 27A O.S. §2-6-201, the Rules of the Department of Environmental Quality (DEQ), and in reliance on the certified statements and representations heretofore made in its application,

ARBUCKLE AGGREGATES, LLC
6831 ASH STREET
FRISCO, TX 75034

Is authorized to discharge storm water from a construction site located in JOHNSTON County at:

MILL CREEK QUARRY
~3 MI NORTH OF MILL CREEK ON SH-1/7
MILL CREEK, OKLAHOMA

The receiving body of water is **UNNAMED TRIBUTARY TO MILL CREEK**

The OPDES requires permittees to have a Storm Water Pollution Plan (SWP3) which includes a description of appropriate sediment control measures. These are applicable to your construction site, which is subject to inspection. Proof of this authorization must be available at the construction site.

The Authorization shall become effective OCT 02 2009 and will expire at midnight September 12, 2012.

All terms and conditions of the modified OPDES Storm Water Construction General Permit OKR10, as published on September 13, 2007, shall apply to the recipient of this authorization.

Mark Derichsweiler, P.E., Engineering Manager
Watershed Planning and Storm Water Permitting
Water Quality Division

Department of Environmental Quality
Water Quality Division

GENERAL PERMIT FOR
ROCK, SAND AND GRAVEL QUARRIES
Authorization Application
(OKG950000)

For:

Arbuckle Aggregates, LLC,
Mill Creek Quarry
Johnston County, OK

Prepared by:

EST, Inc.
3201 S. Berry Road
Norman, Oklahoma 73072

Submitted:
MAY 2010

APPLICATION

FORM 2QSI OPDES	OKLAHOMA DEQ	OPDES APPLICATION FOR GENERAL PERMIT OKG950000 TO DISCHARGE AND/OR DISPOSE OF INDUSTRIAL WASTEWATER AT ROCK, SAND AND GRAVEL QUARRIES **SURFACE IMPOUNDMENTS**

A. NAME AND ADDRESS OF FACILITY

1. FACILITY NAME	2. FACILITY ADDRESS
Arbuckle Aggregates, LLC – Mill Creek Quarry	5020 Tennyson Parkway Plano, Texas 75024

B. FACILITY CONTACT

1. NAME & TITLE	2. PHONE (area code & number)
Pete Dawson, President Arbuckle Aggregates, LLC	(214) 733-7165

C. MAP

Include a topographic map that will show the locations of all of the following items which are or will be present: outfalls, surface impoundments, septic tank systems, storage facilities, containment devices, monitoring wells, and any water wells within one-half (½) mile of any surface impoundment or septic tank system.
Please refer to the attached Topographic Map and Site Diagram (Figures 1 and 2) for further details.

D. SOURCES OF WATER SUPPLY AND AMOUNT USED

Identify all sources of facility water by entering the appropriate letter(s) in the boxes below and then providing the appropriate description(s), as indicated in parentheses. List each source on a separate line. If you have more than one source of a given type, indicate this by entering the letter, followed by two digits (e.g., if your water comes from three wells, the sources would be indicated as G01, G02 and G03). For each source, estimate of the average daily use. Continue on additional sheets if needed.

G = GROUNDWATER WELL	(legal description of well location)
S = SURFACE WATER	(name of stream, river, lake, etc., and legal description of intake)
P = PUBLIC WATER SUPPLY	(name of entity from which water is obtained)
W = WASTEWATER TREATMENT PLANT	(name of entity from which water is obtained)
O = OTHER	(source of supply, and legal description if applicable)

1. SOURCE	2. DESCRIPTION	3. AVG. DAILY USE (GPD)
S 01	Unnamed Tributary to Mill Creek/Pond Water (SW NW SE 23, T1S, R4EIM)	0 - ~0.0982 MGD
S 02	Lake Water/Unnamed Tributary to Mill Creek (SE SE SE 33, T1S, R4EIM)	0 - ~0.0902 MGD
O 01	Facility Storm Water	0 - ~1.74 MGD
G 01	SW SW SE 24, T1S, R4EIM	~200 GPD
G 02	SW SW NW 24, T1S, R4EIM	~1,125 GPD

E. INVENTORY OF CHEMICALS AND RAW MATERIALS

List all chemical compounds and raw materials in containers of 55 gallons or more, used in plant operations and stored outside a building (e.g., solvents, cleaning compounds, water treatment chemicals). Describe the storage location and the purpose for which each chemical is used. Continue on additional sheets if needed.

AREA	CHEMICAL	VOLUME (Gallons)	PURPOSE/USE
Shop, with/in Secondary Containment	Diesel Fuel	~10,000	Equipment Fueling
Shop, with/in Secondary Containment	Gasoline	~550	Equipment Fueling
Shop, with/in Secondary Containment	Bulk Oils	~550	Equipment Maintenance
Shop, with/in Secondary Containment	Antifreeze	~220	Equipment Maintenance

FOR DEQ USE ONLY

OPDES PERMIT NO.	STATE PERMIT NO.	STATE ID NO.

F. LOCATION

For each industrial surface impoundment and/or septic tank system, provide the ID number, legal description, and indicate if the impoundment or septic tank is located in the 100 year flood plain. If the impoundment(s) or tank(s) have previously been permitted, use the ID number(s) contained in the previous permit. If the impoundment(s) or tanks(s) have not previously been permitted, ID numbers should be assigned using the appropriate letter followed by two digits (e.g., if you have three flow-through impoundments, their ID numbers would be F01, F02 and F03). Each type of impoundment and/or septic tank system should be numbered separately (e.g., if you have one flow-through and one total retention impoundment, their ID numbers would be F01 and T01, rather than F01 and T02). Use the same numbers throughout this form. Continue on additional sheets if needed.

F = FLOW-THROUGH SURFACE IMPOUNDMENT
T = TOTAL RETENTION SURFACE IMPOUNDMENT
S = SEPTIC TANK SYSTEM WITHOUT LATERAL LINES
Z = SEPTIC TANK SYSTEM WITH LATERAL LINES

1. ID NO.	2. LEGAL DESCRIPTION (¼, ¼, ¼, Section, Township, Range)	3. FLOOD PLAIN (yes or no)
F01	N ½,NE¼, NW¼ Section 24, T1S, R4 EIM	NA*
F02	NE¼, NW¼ Section 24, T1S, R4 EIM	NA*
F03	S ½, NE¼, NW¼ Section 24, T1S, R4 EIM	NA*
F04	SE¼, SE¼, NW¼ Section 24, T1S, R4 EIM	NA*
T01	N ½, NW¼, SW¼ Section 24, T1S, R4 EIM	NA*
Z01	SW ¼, SW ¼, SE¼ Section 24, T1S, R4 EIM	NA*
Z02	SW ¼, SW¼, NW¼, Section 24, T1S, R4 EIM	NA*
	* No FEMA floodplain maps are available for Johnston County	

G. FLOWS, SOURCES OF WASTE, AND TREATMENT

1. Attach a line drawing showing the flow of wastes or wastewaters through the facility unit processes. Indicate sources of intake water, chemicals, raw materials, and other sources of wastes. Label all unit processes or operations that contribute wastes or wastewater, including production areas, waste treatment units, and sources of blowdown or backwash. Indicate disposal pathways of the wastes and wastewaters, including evaporation, recycle, discharge, solid waste storage, septic tanks, impoundments, land application, landfill or other pathways. Provide a water balance (measured or estimated) on the line drawing that shows average flows between sources, unit processes and disposal pathways. **Please refer to the attached Process Water Flow Diagram (Figure 6) for further details.**
2. For each impoundment and/or septic tank system, provide a description of: (1) All operations and other sources of pollution which contribute waste to the impoundment or tank, including but not limited to process wastes, sanitary wastes, cooling water and stormwater; and (2) The average, maximum and minimum flows contributed by each operation or other source of pollution. Continue on additional sheets if needed.

a. ID NO.	b. OPERATION(S)/SOURCE(S)	c. DAILY FLOW (GPD)		
		(1) AVERAGE	(2) MAXIMUM	(3) MINIMUM
F01	Crushed stone processing (screens, washers, dust suppression, etc.), and facility storm water	~8.64 MGD	NA	0
F02	Flow from F01, and facility storm water	~8.4 MGD	NA	0
F03	Flow from F02, and facility storm water	~8.1 MGD	NA	0
F04	Flow from F03, and facility storm water	~7.85 MGD	NA	0
T01	Return flow from F04, facility storm water, and make-up water	~9.3 MGD	NA	0
Z01	Sanitary wastewater	~ 0.00015 MGD	NA	0
Z02	Sanitary wastewater	~ 0.001 MGD	NA	0

3. List all wastes which are or will be contained in the surface impoundment(s) and/or septic tank system(s) (e.g., lubricants, additives, bactericides, detergents, softeners) and their sources. Include all wastes which have the potential to be contained in the impoundment(s) or tank(s) due to spills, bypasses, or unit failures (e.g., raw materials, oils and greases, solvents or product). Also indicate whether you possess any chemical analysis of the wastes. Continue on additional sheets if needed.

a. ID NO.	b. WASTE/POLLUTANT	c. SOURCE	d. DATA?
F01	Rock fines and solids	Flow from wash plant	NA
F02	Rock fines and solids	Flow from F01	NA
F03	Rock fines and solids	Flow from F02	NA
F04	Rock fines and solids	Flow from F03; makeup/recycled water flow	NA
T01	Rock fines and solids	Flow from F04; Make-up flow from diversion water line	NA
Z01	Sanitary wastewater	Office/Scale House Employee Facilities	NA
Z02	Sanitary wastewater	Shop Employee Facilities	NA

4. For each impoundment and/or septic tank, list the actual or engineering estimate of the volume of sludge generated annually. Indicate whether the sludge will be periodically removed from the impoundment or tank (give frequency of removal) or will accumulate in the impoundment or tank as a site of final disposal. Also indicate whether you possess analytical data on the sludge generated in each impoundment. Continue on separate sheets if necessary.

a. ID NO.	b. FREQUENCY OF REMOVAL/FINAL DISPOSAL SITE	c. SLUDGE ANALYTICAL DATA	d. VOLUME
F01	As needed	NA	Variable
F02	As needed	NA	Variable
F03	As needed	NA	Variable
F04	As needed	NA	Variable
T01	As needed	NA	Variable
Z01	As needed	NA	Variable
Z02	As needed	NA	Variable

a. ID NO.	b. TREATMENT				
	(1) DESCRIPTION	(2) CHEMICALS/ EQUIPMENT	(3) INLET CONC. (units)	(4) GOAL CONC. (units)	(5) DETENTION TIME (units)
F01	Suspended Solids Settling	NA	>500 ppm	NA	<2 days
F02	Suspended Solids Settling	NA	Variable	NA	<2 days
F03	Suspended Solids Settling	NA	Variable	NA	<2 days
F04	Suspended Solids Settling	NA	Variable	< 45 ppm	<1 day
T01	Suspended Solids Settling	NA	Variable	< 45 ppm	>7 days
Z01	Digestive Process	NA	Variable	NA	NA
Z02	Digestive Process	NA	Variable	NA	NA

H. OUTFALL LOCATION

1. For each outfall, list the legal description (¼, ¼, ¼, Section, Township, Range) to the nearest 10 acres and the name of the receiving water

a. Outfall No.	b. Legal Description	c. Receiving Water
PW 001	NE¼ NE¼ SW¼, Section 24, T1S, R4 EIM	Unnamed tributary to Mill Creek
PW 002	NW¼ NW¼ SW¼ Section 24, T1S, R4 EIM	Unnamed tributary to Mill Creek

2. For each outfall, list the latitude and longitude

a. Outfall No.	b. Latitude	c. Longitude
PW 001	34° 27' 17.4" N	96° 50' 15" W
PW 002	34° 27' 17" N	96° 50' 41" W

I. IMPOUNDMENT INFORMATION

1. For each impoundment, attach plans sufficient to define the following design parameters: (1) Length and width at top and bottom; (2) Total depth; (3) Designed minimum and maximum freeboard; (4) Interior and exterior side-slopes (ratio of horizontal to vertical distances); and (5) Inlet and outlet structures.

Please refer to the attached Impoundment Diagrams (Figures 3-5) for further details.

2. For each impoundment, list the holding capacity in gallons (assuming a minimum freeboard) and the dimensions in feet. The following abbreviations are used in the table to indicate the various impoundment dimensions.

BW = BOTTOM WIDTH BL= BOTTOM LENGTH TW= TOP WIDTH TL = TOP LENGTH	D = DEPTH F = MINIMUM FREEBOARD MF = MAXIMUM FREEBOARD	IS = INTERIOR SIDE-SLOPE RATIO (Horiz:Vert) ES = EXTERIOR SIDE-SLOPE RATIO (Horiz:Vert)

a. ID NO.	b. HOLDING CAPACITY (million gallons)	c. *APPROXIMATE* DIMENSIONS								
		(1) BW (ft)	(2) BL (ft)	(3) TW (ft)	(4) TL (ft)	(5) D (ft)	(6) F (ft)	(7) MF (ft)	(8) IS (ratio)	(9) ES (ratio)
F01	~ 15.34 MG (working volume)	50	700	200	850	25	≥3	-	~3:1	~3:1
F02	~ 14.38 MG (working volume)	50	650	200	800	25	≥3	-	~3:1	~3:1
F03	~ 13.43 MG (working volume)	50	600	200	750	25	≥3	-	~3:1	~3:1
F04	~1.8 MG (working volume)	290	47	350	220	10	≥3	-	*~3:1	~3:1
T01	~ 68.65 MG (working volume)	390	490	400	500	5 (100)	≥3	-	~1:0.1 to vert	NA

Please Note: *F04 Interior Side-Slope Ratio is ~3:1 on three sides and ~14:1 on the fourth side

3. In the table below, list the type of liner material (e.g., native soil, compacted clay, flexible membrane, composite, soil/bentonite, concrete, or alternative) to be installed or currently in use. Definitive information and justification is required for alternative liner systems. List the thickness (in inches, feet, or mils, as appropriate) and permeability rate (in inches/hour) or hydraulic conductivity (in centimeters/second), as appropriate, of each liner as proposed or as built. Also list the type of soil (series name and USDA texture) underlying the impoundment. Continue on additional sheets if necessary.

a. ID NO.	b. LINER TYPE	c. THICKNESS (inches)	d. HYDRAULIC CONDUCTIVITY (PERMEABILITY) (cm/sec or in/hr, as appropriate)	e. SOIL TYPE	
				(1) SERIES NAME	(2) USDA TEXTURE
F01	Native earthen materials	In situ	0.6-2.0 in/hr	Lula Loam	Loam-Bedrock
F02	Native earthen materials	In situ	0.6-2.0 in/hr	Claremore Lula Complex	Silty Loam-Bedrock
F03	Native earthen materials	In situ	0.6-2.0 in/hr	Claremore Lula Complex	Silty Loam-Bedrock
F04	Native earthen materials	In situ	2.0-6.0 in/hr	Stephenville Darnell Complex	Fine Sandy Loam-Bedrock
T01	Native earthen materials /Hewn Rock	In situ	variable	Rock	NA

4. Briefly describe the rationale used to select the proposed or currently used liner systems. Include the date of construction, along with a discussion of the physical and chemical properties of liner materials which are indicative of the waste/liner compatibility an the liner's effectiveness as a physical barrier between the waste and groundwater. References can be made to similar facilities, related research, or trade organization guidelines. Continue on additional sheets if necessary.

F01-F04: (to be constructed 2010 -2011) Compacted native earthen materials will be adequate to retain the process water in surface impoundments. The wastewater is considered to be Class III (i.e., containing or suspected to contain pollutants which do not pose a substantial risk of harm to humans, aquatic life, wildlife, or the environment because of a relative immobility in groundwater or a general lack of direct toxicity, and which are not likely, if discharged, to degrade the beneficial uses of the receiving water as designated in the Oklahoma Water Quality Standards). The pollutant of issue is suspended solids, which originates from the native material. Consequently, there is not likely to be an impact to groundwater or surface water.

T01: (to be constructed 2010-2011) Hewn rock and native earthen materials will be adequate to contain Class III wastewater. The pollutant of issue is suspended solids, which originates from the native material. Consequently, there is not likely to be an impact to groundwater or surface water.

J. GROUNDWATER INFORMATION

For each surface impoundment and/or land application site, list the depth to groundwater, the direction of groundwater flow, and the legal description of each well used to determine groundwater information. Continue on additional sheets if necessary.

1. ID NO.	2. DEPTH TO WATER (feet)	3. DIRECTION OF FLOW	4. LEGAL DESCRIPTION OF WELL
F01, F02, F03, F04, & T01	Variable 2.69 – ~33.5	Assumed to be SE (Source: "Hydrogeology and Simulation of Groundwater Flow in the Eastern Arbuckle-Simpson Aquifer" (Scott Christenson, USGS))	SE SE NW 24 T1S R4EIM (87495 Kite) NW NW NW 24 T1S R4EIM (85152 Gay)

K. WELL INFORMATION

1. For each monitoring well or water well within ½ mile of any impoundment and/or septic tank system, list in the table below the total depth, depth of completion, elevation, static water level and legal description of well. Continue on additional sheets if necessary.
2. For each well, attach the well log or drillers log, if available. If no water wells are found within ½ mile, attach a copy of the OWRB letter indicating no wells were found in their records search.

a. ID NO.	b. TOTAL DEPTH	c. DEPTH OF COMPLETION	d. ELEVATION	e. STATIC WATER LEVEL	f. LEGAL DESCRIPTION OF WELL
USGS 342810096501301	75 ft	Unknown	1200 ft	51 ft	NW NW SE 13 T1S R4EIM
Holder Well Unrecorded	Unknown	Unknown	1090 ft	Unknown (>15 ft)	SW NE SE 23 T1S R4EIM
USGS 342745096511501	35 ft	Unknown	1110 ft	21 ft	NW NW NE 23 T1S R4EIM
87495 Kite	100 ft	Unknown	1130 ft	NA (2.69'; '04)	SE SE NW 24 T1S R4EIM
85152 Gay	119 ft	119 ft	1120 ft	24 ft (~10.5–33.5'; '07-08)	NW NW NW 24 T1S R4EIM
USGS 342745096504201	119 ft	Unknown	1135 ft	25 ft	NW NW NW 24 T1S R4EIM
92479 Williams	143 ft	143 ft	1100 ft	44.1 ft	SE SE NE 25 T1S R4EIM
105147 Meridian	240 ft	40 ft	1120 ft	NA	SE NW NE 25 T1S R4EIM
USGS 342633096494401	86 ft	Unknown	1095 ft	51 ft	SE SE NE 25 T1S R4EIM

USGS Well information obtained from USGS Arbuckle-Simpson GIS Layer USGS Wells (http://ok.water.usgs.gov/projects/arbsimp/index.htm).

L. DEQ LANDOWNER NOTIFICATION AFFIDAVIT

1. Does applicant own all land subject to the application:	yes	XX	no	

If yes, proceed to section M. If no, proceed to part 2 of this section.

2. Application(s) for which the applicant does not own all the land subject to the application must notify the owner(s) of leases and/or pipeline right-of-ways. that a permit application has been submitted to the DEQ. The basis for this requirement is Title 27A of the Oklahoma Statutes, § 2-14-103(9), as described in OAC 252:004-7-13(c). DEQ Form 100-810 shall be used for this purpose and is available on the DEQ web page.

M. CERTIFICATION (see instructions)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and true belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

1. NAME & OFFICIAL TITLE (type or print)	2. SIGNATURE	3. DATE SIGNED
Pete Dawson, President	Pete Dawson	5/5/2010

ARBUCKLE AGGREGATES, LLC
MILL CREEK QUARRY OKG950000 PERMIT APPLICATION

PROFESSIONAL ENGINEER CERTIFICATION

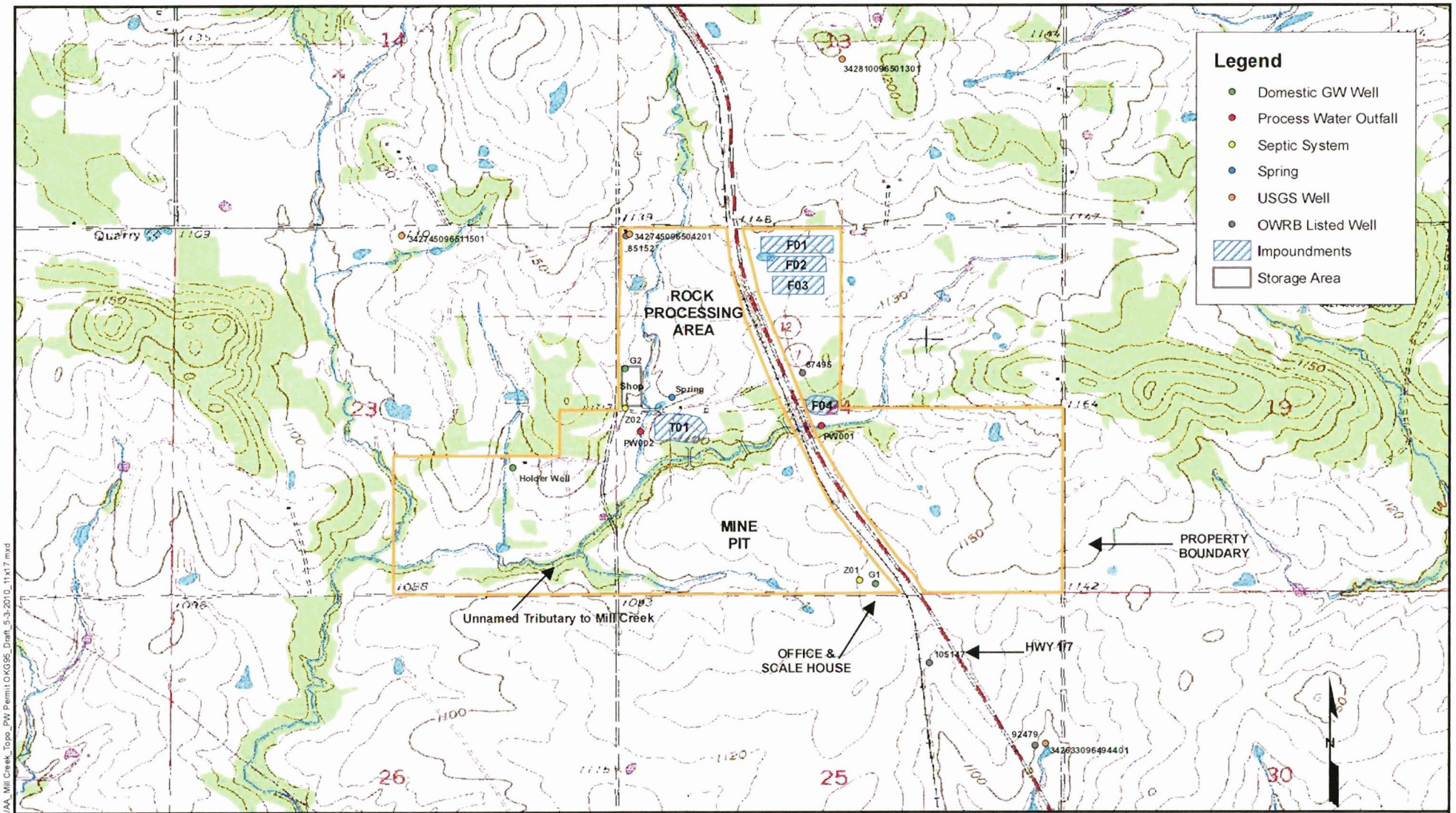
The permit application has been prepared under my supervision and follows generally accepted engineering procedures and guidelines. The process water system design meets the accepted protocols for compliance with General Permit OKR950000. These designs are provided for approval purposes; construction plans, specifications, field certification, and management will be done by others.

MIKE VAHABZADEGAN, P.E. OK PE #15605

5-4-2010
DATE

MIKE VAHABZADEGAN, P.E. OK PE #15605

MAPS & DIAGRAMS



Approximate Scale
0 0.1 0.2 0.3 0.4 0.5 Miles

Date: May 3, 2010
Project Number: 6000845

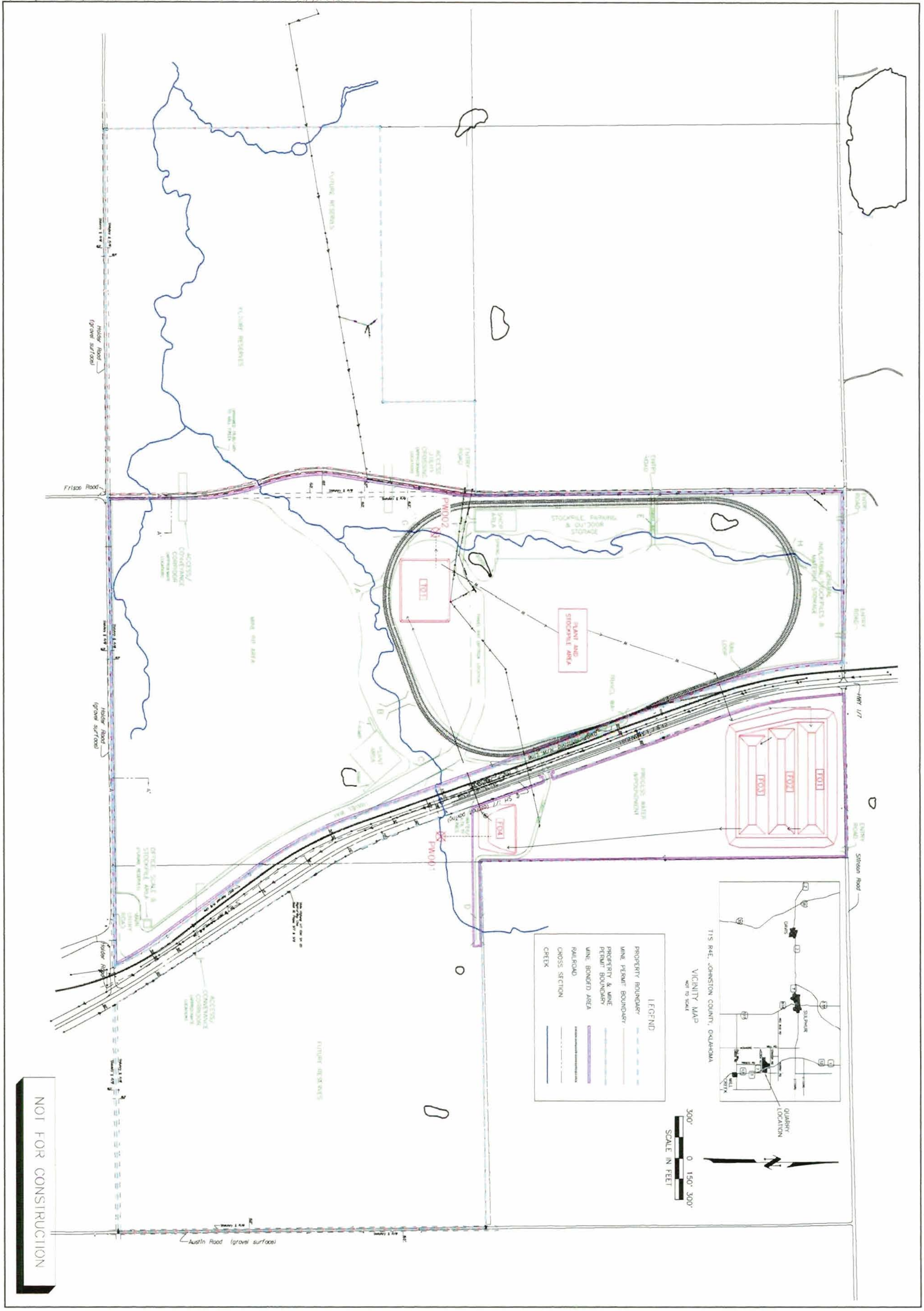
Designed by: DS
Drawn by: DS
Checked by: GC
Approved by: GC

EST
3201 S. Berry Road
Norman, OK 73072
(405) 307-8378

ARBUCKLE AGGREGATES LLC

Figure 1 Topo Map
Arbuckle Aggregates, LLC
Mill Creek Quarry

Process Water/ArcGIS/AA_Mill Creek_Topo_PW Permit OKG95_Draft_5-3-2010_11x17.mxd



DESIGNED BY		CAC
DRAWN BY		AKG
CHECKED BY		--
APPROVED BY		PD
DATE		05/07/2010
SCALE APPROX		1" = 300'
PROJECT NUMBER		6000845.000
SHEET 2		REV 1

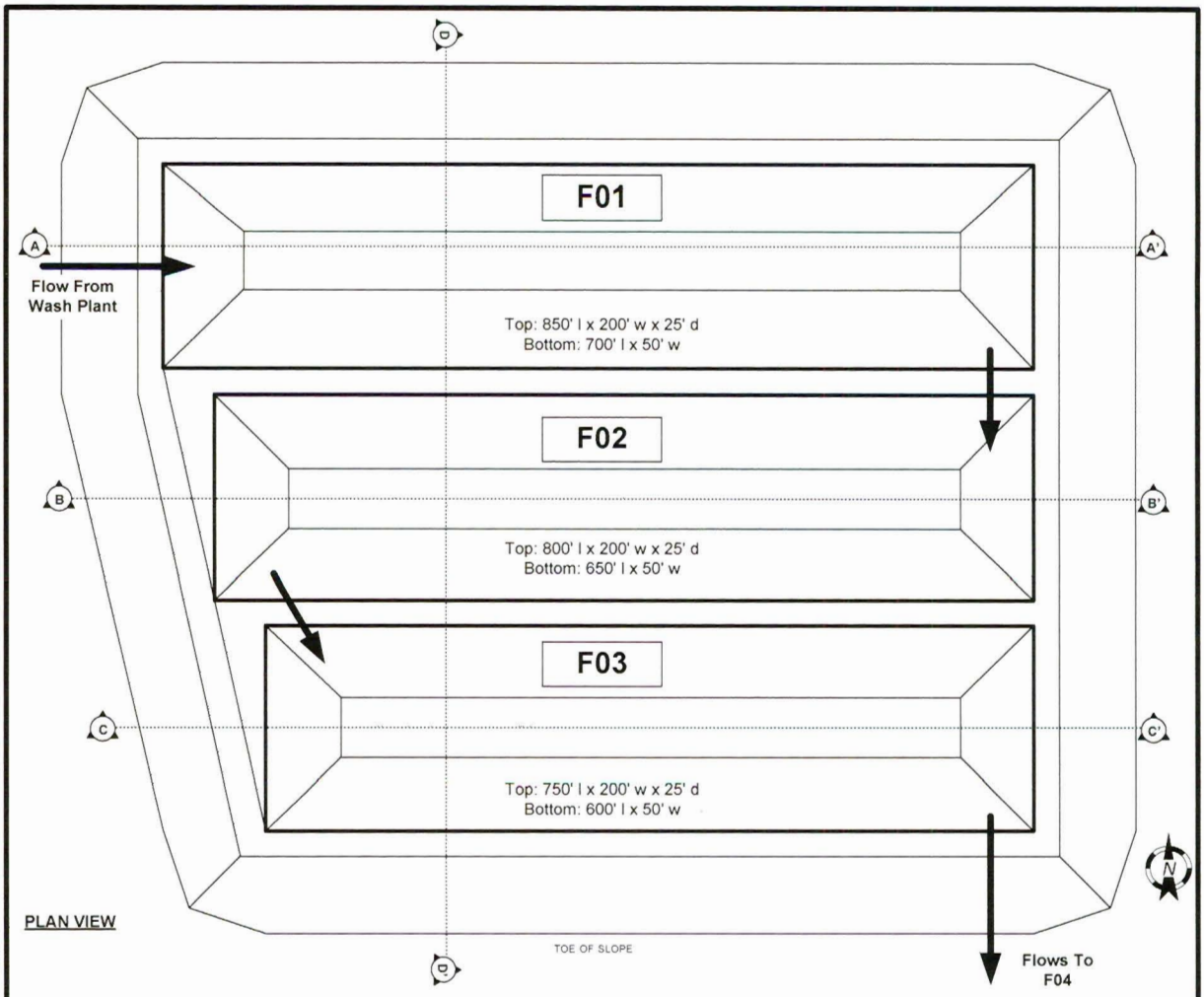
FINAL

ARBUCKLE AGGREGATES, LLC
MILL CREEK QUARRY
SITE DIAGRAM
JOHNSTON COUNTY, OKLAHOMA

ARBUCKLE AGGREGATES LLC

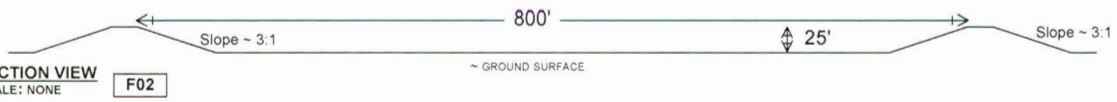
EST
3201 S. BERRY ROAD
NORMAN, OK 73072
(405) 307-8378
CA# 3639 (PE/LS)
EXP. DATE 6/30/10

NO.	DATE	DESCRIPTION OF REVISION OR ISSUE	BY	APP'D



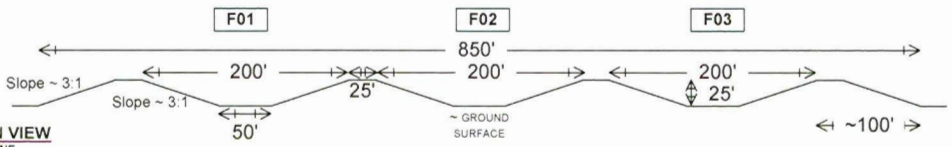
PLAN VIEW

A SECTION VIEW F01
SCALE: NONE



B SECTION VIEW F02
SCALE: NONE

C SECTION VIEW F03
SCALE: NONE



D SECTION VIEW
SCALE: NONE

NOT FOR CONSTRUCTION

COMMENTS

- Not to scale
- Not for construction
- Slope: F01-F03 no steeper than ~ 3:1(inside & outside)
- Freeboard: F01-F03 = 3' min.
- Total Depth: F01-F03 = ~25'
- Minimum offset from property line is 10'
- Property line is fenced to restrict access to impoundments

PW Flowpath → Possible Flowpath ----→

EST

IMPOUNDMENTS F01, F02 & F03 SKEMATICS
Arbuckle Aggregates – Mill Creek Quarry
Johnston County, OK

ARBUCKLE AGGREGATES LLC

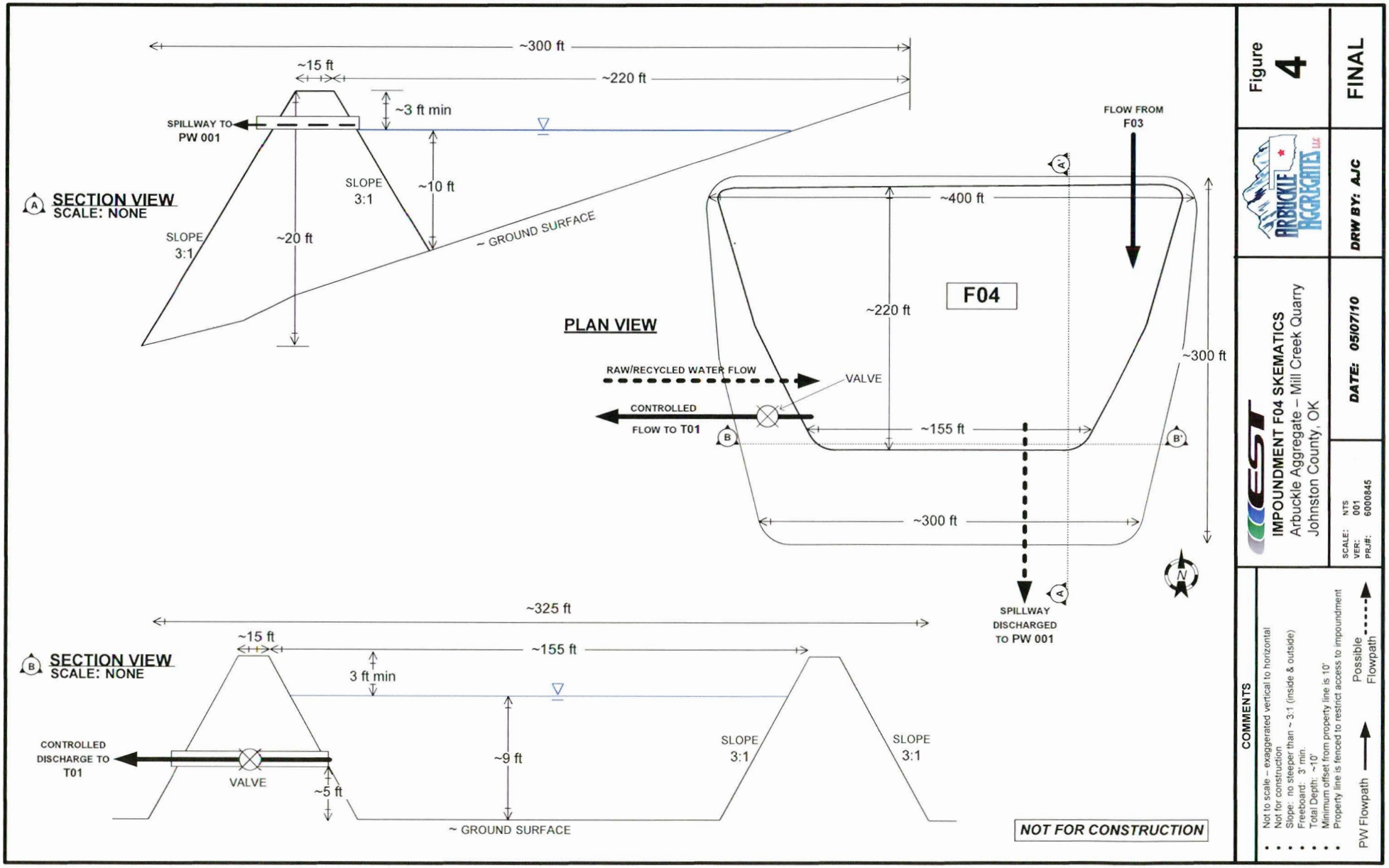
Figure **3**

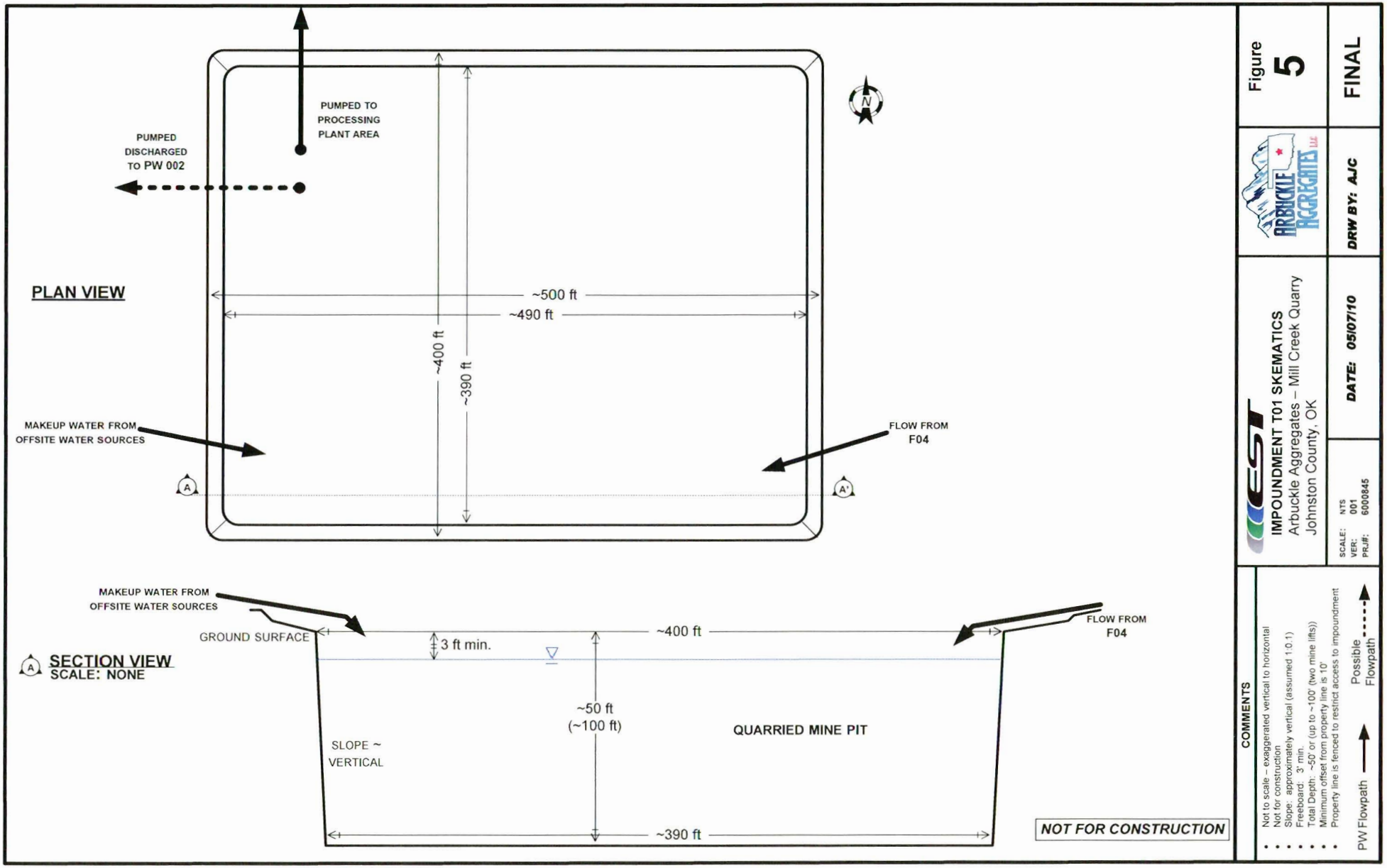
SCALE: NTS
VER: 001
PRJ#: 6000845

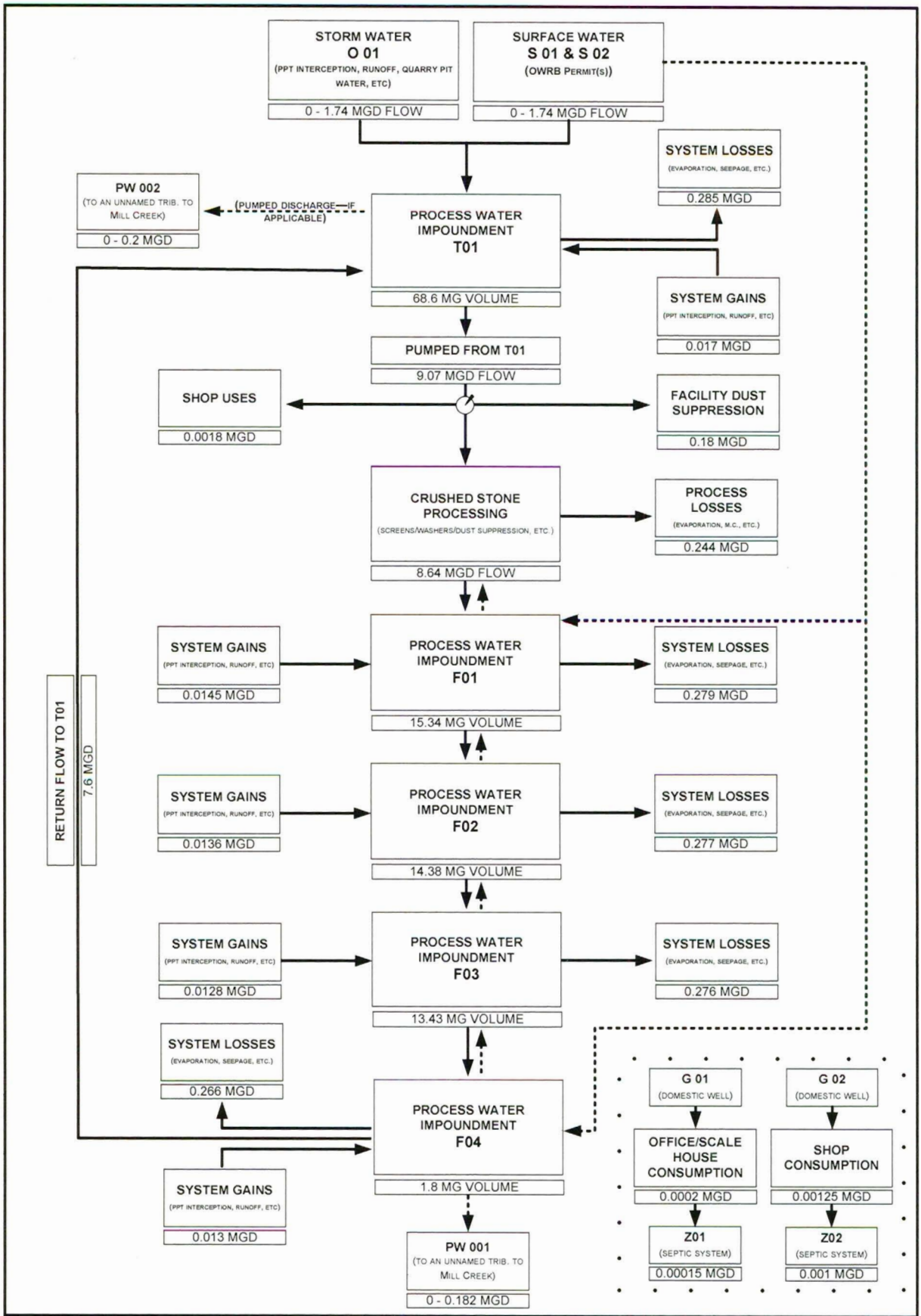
DATE: 05/07/10

DRW BY: AJC

FINAL


~300 ft
~15 ft
~220 ft
~3 ft min
SPILLWAY TO PW 001
SLOPE 3:1
~10 ft
SLOPE 3:1
~20 ft
~ GROUND SURFACE
A SECTION VIEW
SCALE: NONE
FLOW FROM F03
~400 ft
F04
~220 ft
PLAN VIEW
~300 ft
RAW/RECYCLED WATER FLOW
VALVE
CONTROLLED FLOW TO T01
~155 ft
~300 ft
SPILLWAY DISCHARGED TO PW 001
~325 ft
~15 ft
~155 ft
B SECTION VIEW
SCALE: NONE
3 ft min
CONTROLLED DISCHARGE TO T01
VALVE
~5 ft
~9 ft
SLOPE 3:1
SLOPE 3:1
~ GROUND SURFACE
NOT FOR CONSTRUCTION
Figure 4
FINAL
IMPOUNDMENT F04 SKEMATICS
Arbuckle Aggregate – Mill Creek Quarry
Johnston County, OK
DRW BY: AJC
DATE: 05/07/10
SCALE: NTS
VER: 001
PRJ#: 6000845
COMMENTS
Not to scale – exaggerated vertical to horizontal
Not for construction
Slope: no steeper than ~ 3:1 (inside & outside)
Freeboard: 3' min.
Total Depth: ~10'
Minimum offset from property line is 10'
Property line is fenced to restrict access to impoundment
PW Flowpath
Possible Flowpath


PUMPED TO PROCESSING PLANT AREA
PUMPED DISCHARGED TO PW 002
PLAN VIEW
~500 ft
~490 ft
~400 ft
~390 ft
MAKEUP WATER FROM OFFSITE WATER SOURCES
FLOW FROM F04
A
A'
MAKEUP WATER FROM OFFSITE WATER SOURCES
GROUND SURFACE
3 ft min.
~400 ft
FLOW FROM F04
SECTION VIEW
SCALE: NONE
~50 ft
(~100 ft)
QUARRIED MINE PIT
SLOPE ~ VERTICAL
~390 ft
NOT FOR CONSTRUCTION
COMMENTS
Not to scale – exaggerated vertical to horizontal
Not for construction
Slope: approximately vertical (assumed 1.0:1)
Freeboard: 3' min.
Total Depth: ~50' or (up to ~100' (two mine lifts))
Minimum offset from property line is 10'
Property line is fenced to restrict access to impoundment
PW Flowpath
Possible Flowpath
IMPOUNDMENT T01 SKEMATICS
Arbuckle Aggregates – Mill Creek Quarry
Johnston County, OK
SCALE: NTS
VER: 001
PRJ#: 6000845
DATE: 05/07/10
DRW BY: AJC
Figure 5
FINAL



COMMENTS

- ALL VALUES ARE ESTIMATED & APPROXIMATE
- FLOWS ARE CALENDAR DAYS
- POTENTIAL FLOW PATH
- TYPICAL FLOW PATH

WATER BALANCE & FLOW SCHEMATICS
Arbuckle Aggregate – Mill Creek Quarry
Johnston County, OK

SCALE: NTS
VER: 001
PRJ#: 6000845

DATE: 05/07/10

DRW BY: AJC

Figure 6

FINAL

WELL LOGS

OWRB the water agency — theoklahomawaterresourcesboard

Download Results to CSV (ALT-D) | New Search (ALT-N) | Graph Water Levels (ALT-G) | Save Wells for Graphing (ALT-W)

View Drought Monitoring Map and Water Level Graphs

Help & Search Results Key

Search Results for 13,14,23,24,25,26, 01S, 04EI

Displaying Results 1 through 10 of 10.

Well ID	County	Owner Name	Qtrs	SEC-TWP-RGE	Date Const	Well Type	Use	TD (ft)	Static WL	First Zone	Meas. WL	Est. Yld	WL Graph
87495	Johnston	Roger Kite	SESENW	24-01S-04EI	01/01/00	Groundwater Well	Agriculture (non irr)	100	n/a	n/a	view	n/a	☐
85145	Johnston	Paul Warren	SESESW	25-01S-04EI	01/01/00	Groundwater Well	Domestic	185	73	n/a	view	n/a	☐
85152	Johnston	Mildred Gay	NWNWNW	24-01S-04EI	01/01/00	Groundwater Well	Domestic	119	24	n/a	view	n/a	☐
92479	Johnston	Jim Williams	SESENE	25-01S-04EI	01/01/05	Groundwater Well	Agriculture (non irr)	n/a	44.1	n/a	view	n/a	☐
94863	Johnston	Lawanna S. Mckinney	SESWNW	13-01S-04EI	01/01/01	Groundwater Well	Domestic	n/a	57.1	n/a	view	n/a	☐
102071	Johnston	U.S. Silica Company	SENWNE	14-01S-04EI	01/01/00	Groundwater Well	Domestic	200	n/a	n/a	n/a	n/a	☐
102072	Johnston	U.S. Silica Company	SENWNE	14-01S-04EI	01/01/00	Groundwater Well	Mining	450	n/a	n/a	n/a	n/a	☐
105146	Johnston	Meridian Aggregates Co., Lp	SWSWSW	25-01S-04EI	08/28/06	Groundwater Well	Mining	1066	n/a	n/a	n/a	n/a	☐
105147	Johnston	Meridian Aggregates Co., Lp	SENWNE	25-01S-04EI	08/30/06	Groundwater Well	Domestic	240	n/a	n/a	n/a	n/a	☐
109588	Johnston	Meridian Aggregates	NENESW	25-01S-04EI	04/22/07	Groundwater Well	Domestic	300	20	n/a	n/a	n/a	☐

Help & Search Results Key

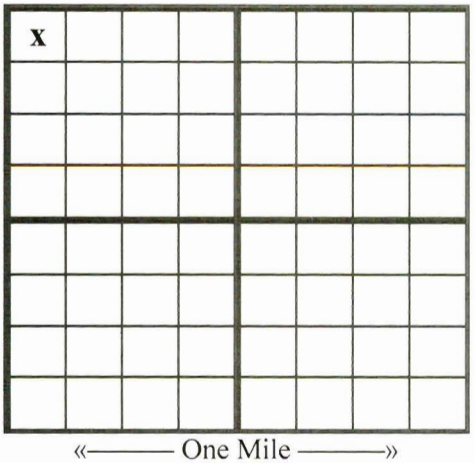
This search does not necessarily contain information about all of the water wells within the area of interest. The multi-purpose well completion report database consists of information submitted to the Board for all well data reported by licensed firms since 1982 and monitoring well data reported since 1988. There could be other wells in the area, which are not included in our database. Wells drilled prior to the licensing requirements for well drillers would not necessarily have had a well log submitted to the OWRB. A field survey may need to be conducted to verify the presence or absence of other water wells. The Oklahoma Water Resources Board does not guarantee the accuracy of the data shown in the well completion records. Data entered into the database are as reported by the well drillers and much of the data have not been field verified for accuracy. If any errors in the records are discovered, please bring them to our attention so that corrections to the database may be made.

MULTI-PURPOSE WELL COMPLETION & PLUGGING REPORT

Oklahoma Water Resources Board
3800 North Classen Boulevard
Oklahoma City, OK 73118
Telephone (405) 530-8800

Legal Location

North



«——— One Mile ———»
Each square is 10-acres

WELL ID NUMBER: 85152

Quarters NW-NW-NW **Section** 24 **Township** 01S **Range** 04EI

Latitude 34.462654952 Longitude -96.84539322

Date collected(latitude and longitude), if different from date the well was drilled: 04/11/2005

Method latitude and longitude was collected: GPS - corrected data (DGPS)

County Johnston Variance Request No. (if applicable) n/a

WELL OWNER - NAME AND ADDRESS

Well Owner Mildred Gay Phone (580) 622-5418

Address/City/State 2101 Lakeview Dr., Apt.2 Sulphur OK Zip 73086

Finding Location junction hwy 7 & 1, S to big sand plant, turn west at Stenson Warehouse, ~1/2 mi section road, SE corner

Well Name ___ Water Rights #: ___

TYPE OF WORK: Groundwater Well **USE OF WELL:** Domestic

NEW WELL CONSTRUCTION DATA

Date Well or Boring Was Completed 01/01/1900

Number of wells or borings represented by this log 1

* (Borings are within the same 10 acre-tract and with the same general depths and lithologies)

Hole Diameter 7 inches to a depth of 119 ft.

CASING INFORMATION ***Note:** If surface casing is used please indicate that on the appropriate well casing information line.

Surface Pipe Material: __ Surface Pipe Diameter ___ inches Surface Pipe From ___ ft to ___ ft

1) Well Casing Material H.C. Steel Casing Diameter 5 inches Casing From 0 ft to 119 ft

SCREEN OR PERFORATION INFORMATION

FILTER PACK INFORMATION

Filter Pack Material: __

WELL SEAL INFORMATION

Type of Surface Seal _Cement Grout_ Surface Seal Interval: From _n/a_ ft to _n/a_ ft

Type of Annular Seal _n/a_ Annular Seal Interval: From _n/a_ ft to _n/a_ ft

Filter Pack Seal Material _n/a_ Filter Pack Seal Interval: From _n/a_ ft to _n/a_ ft

TYPE OF COMPLETION: _Above Ground_

HYDROLOGIC INFORMATION

Depth to water at time of drilling _24_ ft Estimated yield of well __ gpm First water zone __ft

LITHOLOGY DESCRIPTION

MATERIAL	ENCOUNTERED		SATURATED
	FROM (ft.)	TO (ft.)	
none	0	119	N

WELL LOCATION TO POTENTIAL SOURCES OF POLLUTION

Has this well been disinfected after completion of work? _No_

Are than any potential sources of pollution or wastewater lagoons within 300 ft. of the well? _n/a_

Distance of Well is _n/a_ from possible source. Type of possible source: _n/a_

PLUGGING INFORMATION

Date Well or Boring Was Plugged _n/a_ Total Depth of well being plugged __ ft.

Was the well contaminated or was it plugged as though it was contaminated? _n/a_

If the well or boring was plugged as if it was contaminated, was the casing removed or perforated? _n/a_

Was the grout tremied? _n/a_

Backfilled with _n/a_ Backfilled from ___ ft. to ___ ft.

Grouted with _n/a_ Grouted from __ ft. to __ ft.

Grouted with _Cement_ Grouted from __ ft. to __ ft.

Firm Name __ D/PC No. __

Operator Name __ OP No. __

Date _04/12/2004_

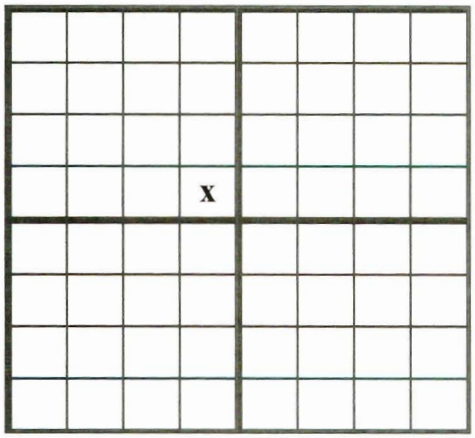
Comments: abandoned well, and hole diameter, date drilled is unknown. Well is in well house with concrete floor and was inspected by OWRB staff.

MULTI-PURPOSE WELL COMPLETION & PLUGGING REPORT

Oklahoma Water Resources Board
3800 North Classen Boulevard
Oklahoma City, OK 73118
Telephone (405) 530-8800

Legal Location

North



Each square is 10-acres

WELL ID NUMBER: 87495

Quarters SE-SE-NW **Section** 24 **Township** 01S **Range** 04EI

Latitude 34.45681 Longitude -96.83769

Date collected(latitude and longitude), if different from date the well was drilled: 06/09/2004

Method latitude and longitude was collected: Mathematical conversion program

County Johnston

Variance Request No. (if applicable) n/a

WELL OWNER - NAME AND ADDRESS

Well Owner Roger Kite

Phone

Address/City/State OK

Zip

Finding Location

Well Name #3

Water Rights #:

TYPE OF WORK: Groundwater Well

USE OF WELL: Agriculture (non irr)

NEW WELL CONSTRUCTION DATA

Date Well or Boring Was Completed 01/01/1900

Number of wells or borings represented by this log 1

* (Borings are within the same 10 acre-tract and with the same general depths and lithologies)

Hole Diameter 1.2 inches to a depth of 100 ft.

CASING INFORMATION ***Note:** If surface casing is used please indicate that on the appropriate well casing information line.

Surface Pipe Material: __ Surface Pipe Diameter __ inches Surface Pipe From __ ft to __ ft

SCREEN OR PERFORATION INFORMATION

FILTER PACK INFORMATION

Filter Pack Material: __

WELL SEAL INFORMATION

Type of Surface Seal n/a

Type of Annular Seal n/a

Filter Pack Seal Material n/a

Surface Seal Interval: From n/a ft to n/a ft

Annular Seal Interval: From n/a ft to n/a ft

Filter Pack Seal Interval: From n/a ft to n/a ft

TYPE OF COMPLETION: Above Ground

HYDROLOGIC INFORMATION

Depth to water at time of drilling ___ ft

Estimated yield of well ___ gpm

First water zone ___ft

LITHOLOGY DESCRIPTION

MATERIAL	ENCOUNTERED		SATURATED
	FROM (ft.)	TO (ft.)	
none	0	100	N

WELL LOCATION TO POTENTIAL SOURCES OF POLLUTION

Has this well been disinfected after completion of work? n/a

Are than any potential sources of pollution or wastewater lagoons within 300 ft. of the well? n/a

Distance of Well is n/a from possible source. Type of possible source: n/a

PLUGGING INFORMATION

Date Well or Boring Was Plugged n/a

Total Depth of well being plugged __ ft.

Was the well contaminated or was it plugged as though it was contaminated? n/a

If the well or boring was plugged as if it was contaminated, was the casing removed or perforated? n/a

Was the grout tremied? n/a

Backfilled with n/a

Backfilled from ___ ft. to ___ ft.

Grouted with n/a

Grouted from ___ ft. to ___ ft.

Grouted with Cement

Grouted from ___ ft. to ___ ft.

Firm Name ___

D/PC No. ___

Operator Name ___

OP No. ___

Date 06/09/2004

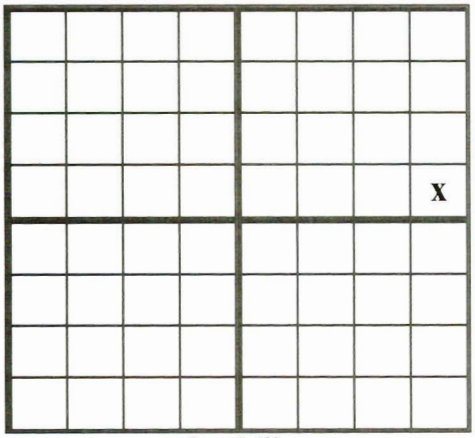
Comments: Field sheet shows illustrative diagram of the well construction. Unknown depth of well and time of completion.

MULTI-PURPOSE WELL COMPLETION & PLUGGING REPORT

Oklahoma Water Resources Board
3800 North Classen Boulevard
Oklahoma City, OK 73118
Telephone (405) 530-8800

Legal Location

North



Each square is 10-acres

WELL ID NUMBER: 92479

Quarters SE-SE-NE **Section** 25 **Township** 01S **Range** 04EI

Latitude 34.44222033 Longitude -96.82936975

Date collected(latitude and longitude), if different from date the well was drilled: 04/05/2005

Method latitude and longitude was collected: GPS - corrected data (DGPS)

County Johnston

Variance Request No. (if applicable) n/a

WELL OWNER - NAME AND ADDRESS

Well Owner Jim Williams Phone (580) 223-0821

Address/City/State P.O. Box 1587 Armore OK Zip 73403

Finding Location From Mill Creek 2.5 miles N in the field beyond the fence on E side of road. Well is located in brush app. 50 yds from road.

Well Name Williams WM #5 Water Rights #: ___

TYPE OF WORK: Groundwater Well **USE OF WELL:** Agriculture (non irr)

NEW WELL CONSTRUCTION DATA

Date Well or Boring Was Completed 01/01/2005

Number of wells or borings represented by this log 1

* (Borings are within the same 10 acre-tract and with the same general depths and lithologies)

CASING INFORMATION ***Note:** If surface casing is used please indicate that on the appropriate well casing information line.

Surface Pipe Material: Steel Surface Pipe Diameter 6 inches Surface Pipe From 0 ft to 143 ft

1) Well Casing Material Stainless Steel Casing Diameter 6 inches Casing From 0 ft to 143 ft

SCREEN OR PERFORATION INFORMATION

FILTER PACK INFORMATION

Filter Pack Material: __

WELL SEAL INFORMATION

Type of Surface Seal _n/a_ Surface Seal Interval: From _n/a_ ft to _n/a_ ft

Type of Annular Seal _n/a_ Annular Seal Interval: From _n/a_ ft to _n/a_ ft

Filter Pack Seal Material _n/a_ Filter Pack Seal Interval: From _n/a_ ft to _n/a_ ft

TYPE OF COMPLETION: _Above Ground_

HYDROLOGIC INFORMATION

Depth to water at time of drilling _44.1_ ft Estimated yield of well ___ gpm First water zone ___ft

LITHOLOGY DESCRIPTION

MATERIAL	ENCOUNTERED		SATURATED
	FROM (ft.)	TO (ft.)	
None	0	143	N

WELL LOCATION TO POTENTIAL SOURCES OF POLLUTION

Has this well been disinfected after completion of work? _No_

Are than any potential sources of pollution or wastewater lagoons within 300 ft. of the well? _n/a_

Distance of Well is _n/a_ from possible source. Type of possible source: _n/a_

PLUGGING INFORMATION

Date Well or Boring Was Plugged _n/a_ Total Depth of well being plugged __ ft.

Was the well contaminated or was it plugged as though it was contaminated? _n/a_

If the well or boring was plugged as if it was contaminated, was the casing removed or perforated? _n/a_

Was the grout tremied? _n/a_

Backfilled with _n/a_ Backfilled from ___ ft. to ___ ft.

Grouted with _n/a_ Grouted from ___ ft. to ___ ft.

Grouted with _Cement_ Grouted from ___ ft. to ___ ft.

Firm Name ___ D/PC No. ___

Operator Name ___ OP No. ___

Date _03/03/2005_

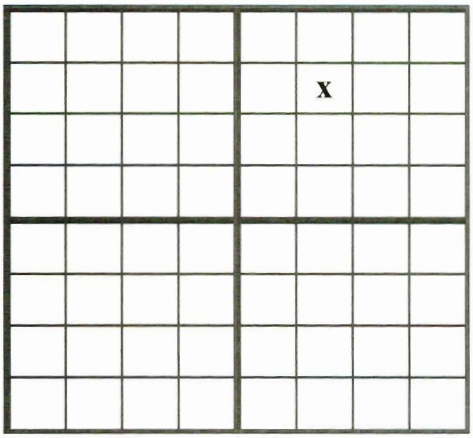
Comments: The well is difficult to find. Look for debris along the tree line on the East side of the road. USGS records indicated the well was 86 feet deep; however, a field measurement reveal a total depth of 143 feet.

MULTI-PURPOSE WELL COMPLETION & PLUGGING REPORT

Oklahoma Water Resources Board
3800 North Classen Boulevard
Oklahoma City, OK 73118
Telephone (405) 530-8800

Legal Location

North



Each square is 10-acres

WELL ID NUMBER: 105147

Quarters SE-NW-NE **Section** 25 **Township** 01S **Range** 04EI

Latitude 34.4465306 Longitude -96.8342375

Date collected(latitude and longitude), if different from date the well was drilled: 08/29/2006

Method latitude and longitude was collected: GPS - corrected data (WAAS)

County Johnston Variance Request No. (if applicable) n/a

WELL OWNER - NAME AND ADDRESS

Well Owner Meridian Aggregates Co., LP Phone

Address/City/State 12310 West Holder Road Mill Creek OK Zip 74856

Finding Location

Well Name Office Well Water Rights #:

TYPE OF WORK: Groundwater Well **USE OF WELL:** Domestic

NEW WELL CONSTRUCTION DATA

Date Well or Boring Was Completed 08/30/2006

Number of wells or borings represented by this log 1

* (Borings are within the same 10 acre-tract and with the same general depths and lithologies)

Hole Diameter 12 inches to a depth of 40 ft.

Hole Diameter 7.875 inches to a depth of 240 ft.

CASING INFORMATION ***Note:** If surface casing is used please indicate that on the appropriate well casing information line.

Surface Pipe Material: PVC / Plastic Surface Pipe Diameter 8 inches Surface Pipe From 0 ft to 40 ft

SCREEN OR PERFORATION INFORMATION

FILTER PACK INFORMATION

Filter Pack Material: __

WELL SEAL INFORMATION

Type of Surface Seal Cement Grout | Surface Seal Interval: From 0 ft to 38 ft

Type of Annular Seal Bentonite Granules/Chips | Annular Seal Interval: From 38 ft to 40 ft

Filter Pack Seal Material n/a | Filter Pack Seal Interval: From n/a ft to n/a ft

TYPE OF COMPLETION: Above Ground

HYDROLOGIC INFORMATION

Depth to water at time of drilling ___ ft | Estimated yield of well ___ gpm | First water zone ___ft

LITHOLOGY DESCRIPTION

MATERIAL	ENCOUNTERED FROM (ft.)	ENCOUNTERED TO (ft.)	SATURATED
Gravel, soil	0	4	N
Dolomite	4	240	N

WELL LOCATION TO POTENTIAL SOURCES OF POLLUTION

Has this well been disinfected after completion of work? Yes

Are than any potential sources of pollution or wastewater lagoons within 300 ft. of the well? Y

Distance of Well is 51 - 75 feet from possible source. Type of possible source: Septic Leach Field

PLUGGING INFORMATION

Date Well or Boring Was Plugged n/a | Total Depth of well being plugged __ ft.

Was the well contaminated or was it plugged as though it was contaminated? n/a

If the well or boring was plugged as if it was contaminated, was the casing removed or perforated? n/a

Was the grout tremied? n/a

Backfilled with n/a | Backfilled from ___ ft. to ___ ft.

Grouted with n/a | Grouted from ___ ft. to ___ ft.

Grouted with Cement | Grouted from ___ ft. to ___ ft.

Firm Name Giles Environmental Services, Inc. | D/PC No. DPC-0596

Operator Name CLARK GILES | OP No. OP-1182

Date 10/19/2006

Comments: n/a

LANDOWNER AFFIDAVIT

DEQ LANDOWNER NOTIFICATION AFFIDAVIT

Tier I, II, or III permit applications in which the applicant does not own all the land subject to the application must notify the owner(s) of leases and/or pipeline right-of-ways. The basis for this requirement is Title 27A of the Oklahoma Statutes, § 2-14-103(9), as described in OAC 252:004-7-13(c).

Please note that you MUST fill out and return this affidavit even if you don't have to give any landowner notice.

A	NOTICE TO THE LANDOWNER(S) IS NOT REQUIRED because: (check one)
	My application does not involve any land.
X	My application involves only land owned by me (or applicant business).
	I have a current lease given to accomplish the permitted purpose.
	I have a current easement given to accomplish the permitted purpose.

OR

B	NOTICE TO THE LANDOWNER(S) IS REQUIRED because the land is owned by someone other than myself or the applicant business AND I HAVE NOTIFIED the following (check one):		
	Landowner(s)		Lessor or Administrator or Executor of the land
METHOD OF DELIVERY (check one):			
	Actual notice, for which I have a signed and dated receipt		
	Service by Sheriff or private process server, for which I have an affidavit		
	Service by certified mail, restricted delivery, for which I have a signed return receipt		
	Legal publication, for which I have an affidavit of publication from the newspaper, because the landowners could not be located through due diligence		
MY RIGHT TO USE THIS LAND is by:			
	Lease		Easement
	Other, Specify		

LANDOWNER AFFIDAVIT CERTIFICATION			
I, as the applicant or an authorized representative of the applicant, hereby certify that notice to the landowner(s) about the permit application for the facility described below was provided per Option A or B above.			
Company Name	Arbuckle Aggregates, LLC	Facility Name	MILL CREEK QUARRY
Facility Address or Legal Description.	PART OF SECTIONS 23 AND 24 T1S R4EIM, JOHNSTON COUNTY, OKLAHOMA		
Responsible Official (signature)	Pete Dawson	Date Signed	5/5/2010
Responsible Official (typed)	PETE DAWSON	Title	PRESIDENT

If the landowner notice applies to your application (Option B Above) you can send the following form to them as your notice:

NOTICE TO LANDOWNER OF FILING

Dear Landowner: (Name) _____

(Applicant name) _____ has filed a permit application with the Oklahoma Department of Environmental Quality for (Name) _____ facility.

This application involves the land owned by you located at:

Address or Legal Description: _____

_____

Signed: _____ Date: _____

MSDSs

MSDS SUMMARY SHEET

Manufacturer:
Name: PHILLIPS PETROLEUM COMPANY
Address 1:
Address 2:
Address 3:
CSZ: BARTLESVILLE **State:** OK **Zipcode:** 74004
Emergency phone: (800) 424-9300
Business phone: 800-762-0942

Product:

Ferndale MSDS#: 1354 **Version # :** 6
Manufacturer MSDS#: 0041
Current? : 2002
Name:

NO. 2 DIESEL FUEL

Synonyms:

CARB **Diesel** TF3
CARB **Diesel**
CARB **Diesel** 10%
Diesel Fuel Oil
EPA Low Sulfur **Diesel** Fuel
EPA Low Sulfur **Diesel** Fuel – Dyed
EPA Off Road High Sulfur **Diesel** – Dyed
Fuel Oil No. 2 – CAS # 68476-30-2
No. 2 **Diesel** Fuel Oil
No. 2 Fuel Oil – Non Hiway – Dyed
No. 2 High Sulfur **Diesel** – Dyed
No. 2 Low Sulfur **Diesel** - Dyed
No. 2 Low Sulfur **Diesel** - Undyed
Crude column 3rd IR
Crude column 3rd side cut
Atmospheric tower 3rd side cut
Ultra Low Sulfur **Diesel** No. 2
Finished **Diesel**
DHT Reactor Feed
Straight Run **Diesel**
Diesel
Middle Distillate

Product/Catalog Numbers:
MSDS Date: 01/01/2002 **(received:** 01/14/2002)

NFPA codes:
Health: 0 **Flammability:** 2 **Reactivity:** 0

MATERIAL SAFETY DATA SHEET
No. 2 Diesel Fuel

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: No. 2 Diesel Fuel
Product Code: Multiple
SAP Code:
Synonyms:
1354
CARB Diesel TF3
CARB Diesel
CARB Diesel 10%
Diesel Fuel Oil
EPA Low Sulfur Diesel Fuel
EPA Low Sulfur Diesel Fuel – Dyed
EPA Off Road High Sulfur Diesel – Dyed
Fuel Oil No. 2 – CAS # 68476-30-2
No. 2 Diesel Fuel Oil
No. 2 Fuel Oil – Non Hiway – Dyed
No. 2 High Sulfur Diesel – Dyed
No. 2 Low Sulfur Diesel - Dyed
No. 2 Low Sulfur Diesel – Undyed
No. 2 Ultra Low Sulfur Diesel – Dyed
No. 2 Ultra Low Sulfur Diesel - Undyed
Intended Use: Fuel
Chemical Family:
Responsible Party: Phillip's Petroleum Company
Bartlesville, Oklahoma 74004
For Additional MSDSs: 800-762-0942
Technical Information:

The intended use of this product is indicated above. If any additional use is known, please contact us at the Technical Information number listed.

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:
Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800) 424-9300
Others: (703) 527-3887 (collect)

California Poison Control System: 800-356-3120

Health Hazards/Precautionary Measures: Causes severe skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Flammable liquid and vapor. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Appearance: Straw-colored to dyed red
Physical Form: Liquid
Odor: Characteristic petroleum

HFPA Hazard Class:
Health: 0 (Least)
Flammability: 2 (Moderate)
Reactivity: 0 (Least)

HMIS Hazard Class
Not Evaluated

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% VOLUME		EXPOSURE GUIDELINE	
		Limits	Agency	Type
Diesel Fuel No. 2 CAS# 68476-34-6	100	100* mg/m3	ACGIH	TWA-SKIN
Naphthalene CAS# 91-20-3	<1	10ppm	ACGIH	TWA
		15ppm	ACGIH	STEL
		10ppm	OSHA	TWA
		250ppm	NIOSH	IDLH

All components are listed on the TSCA inventory

Tosco Low Sulfur No. 2 Diesel meets the specifications of 40 CFR 60.41 for low sulfur diesel fuel.

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

*Proposed ACGIH (1999)

3. HAZARDS IDENTIFICATION

Potential Health Effects:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Severe skin irritant. Contact may cause redness, itching, burning, and severe skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). Not actually toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

Inhalation (Breathing): No information available. Studies by other exposure routes suggest a low degree of toxicity by inhalation.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD – This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract, nausea, diarrhea and transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Cancer: Possible skin cancer hazard (see Sections 11 and 14).

Target Organs: There is limited evidence from animal studies that overexposure may cause injury to the kidney (see Section 11).

Developmental: Inadequate data available for this material.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and kidney disorders.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Immediately remove contaminated shoes, clothing, and constrictive jewelry and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek immediate medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard; Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

5. FIRE FIGHTING MEASURES

Flammable Properties:

Flash Point: >125°F/>52°
OSHA Flammability Class: Combustible liquid
LEL %: 0.3 / UEL %; 10.0
Autoignition Temperature: 500°F/260°C

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharged. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing or high pressure hydraulic oil equipment.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSIZ49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area "No Smoking or Open Flame." Store only in approved containers. Keep away from incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentration below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with an organic vapor cartridge maybe used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is a potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrants a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

Eyes/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn when skin contact is possible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1atm).

Appearance: Straw-colored to dyed red
Physical State: Liquid
Odor: Characteristic petroleum
pH: unavailable
Vapor Pressure (mm Hg): 0.40
Vapor Densisty (air=1):>3
Boiling Point/Range: 320-700°F /160-371°C
Freezing/Melting Point: No Data
Solubility in Water: Negligible
Specific Gravity: 0.81-0.88 @ 60°F
Percent Volatile: Negligible
Evaporation Rate (nBuAc=1): <1
Viscosity: 32.6-40.0 SUS @ 100°F
Bulk Density: 7.08 lbs/gal
Flash Point: >125°F / >52°C
Flammable/Expolsive Limits (%): LEL: 0.3 / UEL: 10.0

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc.

Hazardous Decomposition Products: The use of hydrocarbon fuels in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. ACGIH has included a TLV of 0.05 mg/m3 TWA for diesel exhaust particulate on its 1999 Notice of Intended Changes. See Section 11 for additional information on hazards of engine exhaust.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Diesel Fuel No. 2 (CAS# 68476-34-6)

Carcinogenicity: Chronic dermal application of certain middle distillate streams contained in diesel fuel No. 2 resulted in an increased incidence of skin tumors in mice. This material has not been identified as carcinogen by NTP, IARC, or OSHA. Diesel exhaust is a probable cancer hazard based on tests with laboratory animals.

Target Organ(s): Limited evidence of renal impairment has been noted from a few case reports involving excessive exposure to diesel fuel No. 2.

Naphthalene (CAS# 91-20-3)

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has not been identified as a carcinogen by IARC or OSHA.

12. ECOLOGICAL INFORMATION

Not evaluated at this time

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA "characteristic" hazardous waste due to the characteristic(s) of ignitability (D001) and benzene (D018). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent then the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container ?insate? could be considered a RCRA hazardous waste and must be disposed of with care and in compliance with federal, state and local regulations. Large empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller containers, consult with state and local regulations and disposal authorities.

14. TRANSPORT INFORMATION

DOT Shipping Description: Diesel Fuel, NA1983
Non-Bulk Package Marking: Diesel Fuel, 3, NA 1993, III

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health:	Yes
Chronic Health:	Yes
Fire Hazard:	Yes
Pressure Hazard:	No
Reactive Hazard:	No

SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

Component	CAS Number	Weight %
-- None known --		

California Proposition 65:

Warning: This material contains the following chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Effect
Benzene	Cancer, Developmental and Reproductive Toxicant
Toluene	Developmental Toxicant

Diesel engine exhaust, while not a component of this material, is on the Proposition 65 list of chemicals known to the State of California to cause cancer.

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any. Diesel exhaust is a probable cancer hazard based on tests in laboratory animals. It has been identified as carcinogen by IARC.

EPA (CERCLA Reportable Quantity: None

16. OTHER INFORMATION

Issue Date: 01/01/02
Previous Issue Date: 05/15/01
Product Code: Multiple
Revised Sections: None
Previous Product Code: Multiple
MSDS Number: 0041

Disclaimer of Expressed and Implied Warranties:

The information presented in this Material Data Safety Sheet is based on data believed to be accurate as of the date this Material Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THE PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

Tosco Refining Company ***Ferndale Refinery***

UltraLow Sulfur Diesel Product Specification

Ferndale Product Code:34380xx (5) Product Code: ULSD2

(COMETS)

Specification	Unit	Limit	Test Procedure	Typical
Appearance				
Water & Sediment	Vol %	0.05 Max	D 2709	
Color	Number	3.0 Max	D 1500	
Haze Rating	Rating	2 Max	D 4176	
Composition				
Carbon Residue (Ramsbottom)	Wt %	0.35 Max	D 524, D 189	
Volatility				
90% Recovered	Deg; F	540 Min	D 86	
	Deg; F	640 Min	D 86	
Flash Point	Deg; F	125 Min (1)	D 93	130 F
Gravity	API	30 Min	D 287, D4052	
Fluidity				
Pour Point	Deg; F	See Season Table (6)	D 97	
Cloud Point	Deg; F	See Season Table (6)	D 2500	10 F
Viscosity @ 104F	cSt	1.9 Min	D 445	
	cSt	4.1 Max	D 445	
Lubricity, SLBOCLE	grams	3100 Min	D 6078	3300gm
Lubricity, HFRR	mm	.45	D 6079	
Combustion				
Cetane Index or Cetane Number (3,4)	Number	40.0 Min	D 976, D613	47.0
Corrosion				
Copper Strip, 3hr @ 50 deg C	Number	3 Max (2)	D 130	
Aromatics (4)	Vol %	35 Max	D 1319	25 %
Contaminants				
Total Sulfur	PPM	30 Max	D 2622, D4294	15-20ppm
Water & Sediment	Vol %	0.05 Max	D 1796	
Ash	Wt %	0.01 Max	D 482	
Additives				
Cetane Improver	Lb/MBbl	675 Max		
Dye		Undyed		

1. Minimum release specification is 125 deg. F. The refinery should target 135 deg. F.
2. Test result reported as a number and letter (e.g. 1a). Any letter is allowable as long as the number meets the spec shown.
3. Either specification must be met.
4. Either cetane index minimum or aromatics maximum must be met.
5. Winter cloud and pour specifications may be relaxed to the summer specifications by agreement with the customer.
6. Season Table

Month	Product Code	Pour Point	Cloud Point
Jan, Feb, Nov, Dec	WI	0 max (5)	14 max (5)
Mar - Oct	SU	15 max	24 max

CITGO Gasolines, All Grades Unleaded
Material Safety Data Sheet

CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210

MSDS No. UNLEAD
Revision Date 10/14/2008

IMPORTANT: This MSDS is prepared in accordance with 29 CFR 1910.1200. Read this MSDS before transporting, handling, storing or disposing of this product and forward this information to employees, customers and users of this product.

Hazard Rankings

	HMIS	NFPA
Health Hazard	* 2	1
Fire Hazard	3	3
Reactivity	0	0

* = Chronic Health Hazard

Protective Equipment

Minimum Recommended
See Section 8 for Details

Emergency Overview

Physical State Liquid.
Color Transparent, clear to amber or red. **Odor** Pungent, characteristic gasoline.

DANGER:
Extremely flammable liquid; vapor may cause flash fire or explosion.
Vapor may travel considerable distance to source of ignition and flash back.
Use Only as a Motor Fuel. Do Not Siphon by Mouth.
Harmful or fatal if swallowed - Can enter lungs and cause damage.
High concentrations of vapor reduce oxygen available for breathing and may cause suffocation.
May be harmful if inhaled or absorbed through the skin.
Mist or vapor may irritate the eyes, mucous membranes, and respiratory tract.
Liquid contact may cause eye and skin irritation.
Overexposures may cause central nervous system (CNS) depression and target organ effects (See Section 3).
Harmful or fatal if swallowed - Can enter lung and cause damage.
Inhalation overexposure can increase the heart's susceptibility to arrhythmias (irregular beats).
Contains Benzene - Cancer Hazard.
Long term exposure to gasoline vapor has caused cancer in laboratory animals.
Avoid Spills. Spills may present both a physical and an environmental hazard.

SECTION 1. PRODUCT IDENTIFICATION

Trade Name	CITGO Gasolines, All Grades Unleaded	**Technical Contact**	(832) 486-5940
Product Number	Various	**Medical Emergency**	(832) 486-4700
CAS Number	Mixture.	**CHEMTREC Emergency (United States Only)**	(800) 424-9300
Product Family	Motor fuels.		

Synonyms Unleaded Gasolines; Conventional Unleaded Gasoline with Ethanol; Unleaded Gasoline with Ethanol; Reformulated Unleaded Gasoline with Ethanol; Motor Gasolines; Petrol; Automobile Motor Fuels; Finished Gasolines; Gasoline, Regular Unleaded; Gasoline, Mid-grade Unleaded; Gasoline, Premium Unleaded; Reformulated Gasolines (RFG); Reformulated Motor Fuels; Oxygenated Motor Spirits; Gasoline, Regular Reformulated; Gasoline, Mid-grade Reformulated; Gasoline, Premium Reformulated; CBOB; RBOB; GTAB; Clean Burning Gasoline (CBG); CARB Gasoline with Ethanol.

SECTION 2. COMPOSITION

Gasoline is a complex and variable mixture that originates from finished refinery streams. These streams can contain the components listed below that are regulated or are associated with certain potential health effects. The typical concentration of ethanol in gasoline does not exceed 10% (v/v).

Component Name(s)	CAS Registry No.	Concentration (%)
Toluene	108-88-3	<25
Pentanes, all isomers	Mixture	<20
Octanes, all isomers	Mixture	<20
Xylene, all isomers	1330-20-7	<18
Hexane, other isomers	Mixture	<15
Heptane, all isomers	142-82-5	<15
Ethanol	64-17-5	<10
n-Hexane	110-54-3	<8
Benzene	71-43-2	<5
Trimethylbenzenes, all isomers	25551-13-7	<5
2,2,4-Trimethylpentane	540-84-1	<5
Cumene	98-82-8	<4
Ethylbenzene	100-41-4	<4
1, 2, 4 Trimethylbenzene	95-63-6	<3
Cyclohexane	110-82-7	<3
Cyclopentane	287-92-3	<2
Naphthalene	91-20-3	<2
Styrene	100-42-5	<1

SECTION 3. HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact. Eye contact. Inhalation. Ingestion.

Signs and Symptoms of Acute Exposure

Inhalation Breathing high concentrations may be harmful. Mist or vapor can irritate the throat and lungs. Breathing this material may cause central nervous system depression with symptoms including nausea, headache, dizziness, fatigue, drowsiness, or unconsciousness. Breathing high concentrations of this material, for example, in an enclosed space or by intentional abuse, can cause irregular heartbeats which can cause death.

Eye Contact This product can cause eye irritation with short-term contact with liquid, mists or vapor. Symptoms include stinging, watering, redness, and swelling. In severe cases, permanent eye damage can result.

Skin Contact This material can cause skin irritation. The severity of irritation will depend on the amount of material that is applied to the skin and the speed and thoroughness that it is removed. It is likely that some components of this material are able to pass into the body through the skin and may cause similar effects as from breathing or swallowing it. If the skin is damaged or abraded, absorption increases.

Ingestion

If swallowed, this material may irritate the mucous membranes of the mouth, throat, and esophagus. It can be readily absorbed by the stomach and intestinal tract. Symptoms include a burning sensation of the mouth and esophagus, nausea, vomiting, dizziness, staggered gait, drowsiness, loss of consciousness and delirium, as well as additional central nervous system (CNS) effects.

Due to its light viscosity, there is a danger of aspiration into the lungs during swallowing and subsequent vomiting. Aspiration can result in severe lung damage or death. Cardiovascular effects include shallow rapid pulse with pallor (loss of color in the face) followed by flushing (redness of the face). Also, progressive CNS depression, respiratory insufficiency and ventricular fibrillation leads to death.

Chronic Health Effects Summary

Intentional misuse by deliberately concentrating and inhaling gasoline can be harmful or fatal. Altered mental state, drowsiness, peripheral motor neuropathy, irreversible brain damage ("Petrol Sniffers Encephalopathy"), delirium, seizures and sudden death are associated with repeated abuse of gasoline or naphtha.

Chronic effects of ingestion and subsequent aspiration into the lungs may include pneumatocele (lung cavity) formation and chronic lung dysfunction.

Benzene, a component of this product, is associated with blood disorders and may damage bone marrow, causing certain types of anemia. The International Agency for Research on Cancer (IARC) (1987, 2004, 2007) and the U.S. EPA (IRIS 2007) have determined that benzene is a human carcinogen. It is also capable of causing changes in living cells' genetic material (chromosomes) and is considered to be a mutagen.

Repeated and prolonged overexposure to n-hexane has been associated with peripheral nerve tissue damage. Adverse effects include numbness, tingling, pain, and loss of muscle control in the extremities, disorientation, impaired vision and reflexes, decline in motor function and paralysis.

Prolonged or repeated overexposure to toluene, a component of this product, has been associated with reproductive effects in experimental animals and in long-term chemical abuse situations. Long-term overexposure to toluene has been associated with impaired color vision. Also, long-term overexposure to toluene in occupational environments have been associated with hearing damage.

Prolonged or repeated overexposure to xylene, a component of this product, has been associated with hearing damage in laboratory animals. Repeated overexposure may cause injury to bone marrow, blood cells, kidney, and liver.

Refer to Section 11 of this MSDS for additional health-related information.

Conditions Aggravated by Exposure

Disorders of the following organs or organ systems that may be aggravated by significant exposure to this material or its components include: Skin, Respiratory System, Liver, Kidneys, Central Nervous System (CNS), Cardiovascular System, Blood-forming system.

Target Organs

May cause damage to the following organs: blood, kidneys, lungs, the reproductive system, liver, mucous membranes, heart, peripheral nervous system, cardiovascular system, upper respiratory tract, skin, auditory system, bone marrow, central nervous system (CNS), eye, lens or cornea

Carcinogenic Potential

This material may contain benzene, ethylbenzene, naphthalene or styrene at concentrations above 0.1%. Benzene is considered to be a known human carcinogen by OSHA, IARC and NTP. IARC has identified ethylbenzene, styrene, naphthalene, gasoline and gasoline engine exhaust as possibly carcinogenic to humans (Group 2B) based on laboratory animal studies.

OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Health Hazard Classification				OSHA Physical Hazard Classification					
Irritant	X	Sensitizer		Combustible		Explosive		Pyrophoric	
Toxic		Highly Toxic		Flammable	X	Oxidizer		Water-reactive	
Corrosive		Carcinogenic	X	Compressed Gas		Organic Peroxide		Unstable	

SECTION 4. FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

Inhalation

Immediately move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately. If exposed to benzene in an emergency situation, a medical evaluation should be completed at the end of the work-shift in accordance with OSHA requirements.

Eye Contact

Flush eyes with cool, clean, low-pressure water for at least 15 minutes. Hold eyelids apart to ensure complete irrigation of the eye and eyelid tissue. If easily accomplished, check for and remove contact lenses. If contact lenses cannot be removed, seek immediate medical attention. Do not use eye ointment. Seek medical attention.

Skin Contact

Remove contaminated shoes and clothing. Flush affected area with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. Do not use ointments. If skin surface is not damaged, clean affected area thoroughly with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists.

Ingestion

Do not induce vomiting. If spontaneous vomiting is about to occur, place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. Never give anything by mouth to a person who is not fully conscious. Do not leave victim unattended. Seek medical attention immediately.

Notes to Physician

INHALATION: Inhalation overexposure can produce toxic effects. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Administer supplemental oxygen with assisted ventilation, as required.

This material (or a component) sensitizes the heart to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material. Administration of sympathomimetic drugs should be avoided.

INGESTION: If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.

SECTION 5. FIRE FIGHTING MEASURES

NFPA Flammability Classification NFPA Class-IB flammable liquid.

Flash Point Closed cup: -43°C (-45°F). (Tagliabue [ASTM D-56])

Lower Flammable Limit AP 1.4 % **Upper Flammable Limit** AP 7.6 %

Autoignition Temperature	AP 280°C (536°F)
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons, aldehydes and other products of incomplete combustion.
Special Properties	Flammable Liquid! This material releases vapors at or below ambient temperatures. When mixed with air in certain proportions and exposed to an ignition source, its vapor can cause a flash fire. Use only with adequate ventilation. Vapors are heavier than air and may travel long distances along the ground to an ignition source and flash back. A vapor and air mixture can create an explosion hazard in confined spaces such as sewers. If container is not properly cooled, it can rupture in the heat of a fire.
Extinguishing Media	SMALL FIRE: Use dry chemicals, carbon dioxide, foam, or inert gas (nitrogen). Carbon dioxide and inert gas can displace oxygen. Use caution when applying carbon dioxide or inert gas in confined spaces. LARGE FIRE: Use foam, water fog, or water spray. Water may be ineffective. Water may not extinguish the fire. Water fog and spray are effective in cooling containers and adjacent structures. However, water can be used to cool the external walls of vessels to prevent excessive pressure, autoignition or explosion. DO NOT use a solid stream of water directly on the fire as the water may spread the fire to a larger area.
Protection of Fire Fighters	Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Evacuate area and fight the fire from a maximum distance or use unmanned hose holders or monitor nozzles. Cover pooling liquid with foam. Containers can build pressure if exposed to radiant heat; cool adjacent containers with flooding quantities of water until well after the fire is out. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines. Be aware that burning liquid will float on water. Notify appropriate authorities of potential fire and explosion hazard if liquid enter sewers or waterways.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Flammable Liquid! Release causes an immediate fire or explosion hazard. Evacuate all non-essential personnel from immediate area and establish a "regulated zone" with site control and security. A vapor-suppressing foam may be used to reduce vapors. Eliminate all ignition sources. All equipment used when handling this material must be grounded. Stop the leak if it can done without risk. Do not touch or walk through spilled material. Remove spillage immediately from hard, smooth walking areas. Prevent spilled material from entering waterways, sewers, basements, or confined areas. Absorb or cover with dry earth, sand, or other non-combustible material and transfer to appropriate waste containers. Use clean, non-sparking tools to collect absorbed material.

For large spills, secure the area and control access. Prevent spilled material from entering sewers, storm drains, other drainage systems, and natural waterways. Dike far ahead of a liquid spill to ensure complete collection. Water mist or spray may be used to reduce or disperse vapors; but, it may not prevent ignition in closed spaces. This material will float on water and its run-off may create an explosion or fire hazard. Verify that responders are properly HAZWOPER-trained and wearing appropriate respiratory equipment and fire-resistant protective clothing during cleanup operations. In an urban area, cleanup spill as soon as possible; in natural environments, cleanup on advice from specialists. Pick up free liquid for recycle and/or disposal if it can be accomplished safely with explosion-proof equipment. Collect any excess material with absorbant pads, sand, or other inert non-combustible absorbent materials. Place into appropriate waste containers for later disposal. Comply with all applicable local, state and federal laws and regulations.

SECTION 7. HANDLING AND STORAGE

Handling

FLAMMABLE LIQUID AND VAPOR. **USE ONLY as a motor fuel.** DO NOT siphon by mouth. DO NOT use as a lighter fluid, solvent or cleaning fluid. Prior to handling or refueling, stop all engines and auxillary equipment. Turn off all electronic equipment including cellular telephones. DO NOT leave nozzle unattended during filling or refueling a vehicle. DO NOT re-enter vehicle while refueling. Keep nozzle spout in contact with the container during the entire filling operations.

A static electrical charge can accumulate when this material is flowing through pipes, nozzles or filters and when it is agitated. A static spark discharge can ignite accumulated vapors particularly during dry weather conditions. Always bond receiving containers to the fill pipe before and during loading, following NFPA-704 and /or API RP 2003 requirements. Always keep nozzle in contact with the container throughout the loading process. Do not fill any portable container in or on a vehicle. Special precautions, such as reduced loading rates and increased monitoring, must be observed during "switch loading" operations (i.e., loading this material in tanks or shipping compartments that previously contained middle distillates or similar products).

A spill or leak can cause an immediate fire or explosion hazard. Keep containers closed and do not handle or store near heat, sparks, or any other potential ignition sources. Avoid contact with oxidizing agents. Do NOT breathe vapor. Use only with adequate ventilation and personal protection. Never siphon by mouth. Avoid contact with eyes, skin, and clothing. Prevent contact with food and tobacco products. Do NOT take internally.

When performing repairs and maintenance on contaminated equipment, keep unnecessary persons away from the area. Eliminate all potential ignition sources. Drain and purge equipment, as necessary, to remove material residues. Follow proper entry procedures, including compliance with 29 CFR 1910.146 prior to entering confined spaces such as tanks or pits. Use gloves constructed of impervious materials and protective clothing if direct contact is anticipated. Use appropriate respiratory protection when concentrations exceed any established occupational exposure level (See Section 8) Promptly remove contaminated clothing. Wash exposed skin thoroughly with soap and water after handling.

Non-equilibrium conditions may increase the fire hazard associated with this product. A static electrical charge can accumulate when this material is flowing through pipes, nozzles or filters and when it is agitated. A static spark discharge can ignite accumulated vapors particularly during dry weather conditions. Always bond receiving containers to the fill pipe before and during loading. Always confirm that receiving container is properly grounded. Bonding and grounding alone may be inadequate to eliminate fire and explosion hazards associated with electrostatic charges. Carefully review operations that may increase the risks associated with static electricity such as tank and container filling, tank cleaning, sampling, gauging, loading, filtering, mixing, agitation, etc. In addition to bonding and grounding, efforts to mitigate the hazards of an electrostatic discharge may include, but are not limited to, ventilation, inerting and/or reduction of transfer velocities. Dissipation of electrostatic charges may be improved with the use of conductivity additives when used with other mitigation efforts, including bonding and grounding. Always keep nozzle in contact with the container throughout the loading process.

Do NOT fill any portable container in or on a vehicle. Do NOT use compressed air for filling, discharging or other handling operations. Product container is NOT designed for elevated pressure. Do NOT pressurize, cut, weld, braze solder, drill, or grind on containers. Do NOT expose product containers to flames, sparks, heat or other potential ignition sources. Empty containers may contain material residues which can ignite with explosive force. Observe label precautions.

Protect the environment from releases of this material. Prevent discharges to surface waters and groundwater. Maintain handling, transfer and storage equipment in proper working order.

Misuse of empty containers can be dangerous. Empty containers may contain material residues which can ignite with explosive force. **Cutting or welding of empty containers**

can cause fire, explosion, or release of toxic fumes from residues. Do not pressurize or expose empty containers to open flame, sparks, or heat. Keep container closed and drum bungs in place. All label warnings and precautions must be observed. Return empty drums to a qualified reconditioner. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling, or disposing of empty containers and/or waste residues of this material.

Storage

Keep container tightly closed. Store in a cool, dry, well-ventilated area. Store only in approved containers. Do not store with oxidizing agents. Do not store at elevated temperatures or in direct sunlight. Protect containers against physical damage. Head spaces in tanks and other containers may contain a mixture of air and vapor in the flammable range. Vapor may be ignited by static discharge. Storage area must meet OSHA requirements and applicable fire codes. Additional information regarding the design and control of hazards associated with the handling and storage of flammable and combustible liquids may be found in professional and industrial documents including, but not limited to, the National Fire Protection Association (NFPA) publications NFPA 30 ("Flammable and Combustible Liquid Code"), NFPA 77 ("Recommended Practice on Static Electricity") and the American Petroleum Institute (API) Recommended Practice 2003, ("Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents").

Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers or waste residues of this product.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls

Provide ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits indicated below. All electrical equipment should comply with the National Electrical Code. An emergency eye wash station and safety shower should be located near the work-station.

Personal Protective Equipment

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.

Eye Protection

Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Chemical goggles should be worn during transfer operations or when there is a likelihood of misting, splashing, or spraying of this material. A suitable emergency eye wash water and safety shower should be located near the work station.

Hand Protection

Avoid skin contact. Use gloves (e.g., disposable PVC, neoprene, nitrile, vinyl, or PVC/NBR). Wash hands with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities or leaving work. DO NOT use this material as a skin cleaner.

Body Protection

Avoid skin contact. Wear long-sleeved fire-retardant garments (e.g., Nomex®) while working with flammable and combustible liquids. Additional chemical-resistant protective gear may be required if splashing or spraying conditions exist. This may include an apron, boots and additional facial protection. If product comes in contact with clothing, immediately remove soaked clothing and shower. Promptly remove and discard contaminated leather goods.

Respiratory Protection For known vapor concentrations above the occupational exposure guidelines (see below), use a NIOSH-approved organic vapor respirator if adequate protection is provided. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134). For airborne vapor concentrations that exceed the recommended protection factors for organic vapor respirators, use a full-face, positive-pressure, supplied air respirator. Due to fire and explosion hazards, do not enter atmospheres containing concentrations greater than 10% of the lower flammable limit of this product.

General Comments Warning! Use of this material in spaces without adequate ventilation may result in generation of hazardous levels of combustion products and/or inadequate oxygen levels for breathing. Odor is an inadequate warning for hazardous conditions.

Occupational Exposure Guidelines

Substance	Applicable Workplace Exposure Levels
Gasoline	**ACGIH (United States).** TWA: 300 ppm 8 hour(s). STEL: 500 ppm 15 minute(s).
Pentanes, all isomers	**ACGIH (United States).** TWA: 600 ppm 8 hour(s). **OSHA (United States).** TWA: 1000 ppm 8 hour(s).
Octanes, all isomers	**ACGIH (United States).** TWA: 300 ppm 8 hour(s). **OSHA (United States).** TWA: 500 ppm 8 hour(s).
Toluene	**ACGIH (United States). Skin** TWA: 20 ppm 8 hour(s). **OSHA (United States).** TWA: 200 ppm 8 hour(s). CEIL: 300 ppm PEAK: 500 ppm 1 times per shift, 10 minute(s).
Hexane, other isomers	**ACGIH (United States).** TWA: 500 ppm 8 hour(s). STEL: 1000 ppm 15 minute(s).
Heptane, all isomers	**ACGIH (United States).** TWA: 400 ppm 8 hour(s). STEL: 500 ppm 15 minute(s). **OSHA (United States).** TWA: 500 ppm 8 hour(s).
Xylene, all isomers	**ACGIH (United States).** TWA: 100 ppm 8 hour(s). STEL: 150 ppm 15 minute(s). **OSHA (United States).** TWA: 100 ppm 8 hour(s).
Ethanol	**ACGIH (United States).** TWA: 1000 ppm 8 hour(s). **OSHA (United States).** TWA: 1000 ppm 8 hour(s).
Benzene	**ACGIH (United States). Skin** TWA: 0.5 ppm 8 hour(s). STEL: 2.5 ppm 15 minute(s). **OSHA (United States). Skin Notes: See Table Z-2 for exclusions in 20 CFR 1910.1028 to the PEL.** TWA: 1 ppm 8 hour(s). STEL: 5 ppm 15 minute(s).
n-Hexane	**ACGIH (United States). Skin** TWA: 50 ppm 8 hour(s). **OSHA (United States).** TWA: 500 ppm 8 hour(s).
Cumene	**ACGIH (United States).** TWA: 50 ppm 8 hour(s). **OSHA (United States). Skin**

	TWA: 50 ppm 8 hour(s).
Trimethylbenzenes, all isomers	**ACGIH (United States).** TWA: 25 ppm 8 hour(s).
Ethylbenzene	**ACGIH (United States).** TWA: 100 ppm 8 hour(s). STEL: 125 ppm 15 minute(s). **OSHA (United States).** TWA: 100 ppm 8 hour(s).
Cyclohexane	**ACGIH (United States).** TWA: 100 ppm 8 hour(s). **OSHA (United States).** TWA: 300 ppm 8 hour(s).
Cyclopentane	**ACGIH (United States).** TWA: 600 ppm 8 hour(s).
Naphthalene	**ACGIH (United States). Skin** TWA: 10 ppm 8 hour(s). STEL: 15 ppm 15 minute(s). **OSHA (United States).** TWA: 10 ppm 8 hour(s).
Styrene	**ACGIH (United States).** TWA: 20 ppm 8 hour(s). STEL: 40 ppm 15 minute(s). **OSHA (United States).** TWA: 100 ppm 8 hour(s). STEL: 200 ppm 15 minute(s). PEAK: 600 ppm

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (TYPICAL)

Physical State	Liquid.	**Color**	Transparent, clear to amber or red.	**Odor**	Pungent, characteristic gasoline.
Specific Gravity	0.72 - 0.77 (Water = 1)	**pH**	Not applicable	**Vapor Density**	3 to 4 (Air = 1)

Boiling Range	38 to 204°C (100 to 400°F)	**Melting/Freezing Point**	Not available.
Vapor Pressure	220 to 450 mm Hg at 20°C (68°F) or 6 to 15 Reid-psia at 37.8°C (100°F).	**Volatility**	720 to 770 g/l VOC (w/v)
Solubility in Water	Very slightly soluble in cold water. (<0.1 % w/w)	**Viscosity (cSt @ 40°C)**	<1

Flash Point	Closed cup: -43°C (-45°F). (Tagliabue [ASTM D-56])
Additional Properties	Average Density at 60°F = 6.0 to 6.4 lbs./gal. (ASTM D-2161)

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable.	**Hazardous Polymerization**	Not expected to occur.

Conditions to Avoid	Keep away from heat, flame and other potential ignition sources. Keep away from strong oxidizing conditions and agents.
Materials Incompatibility	Strong acids, alkalies and oxidizers such as liquid chlorine, other halogens, hydrogen peroxide and oxygen.
Hazardous Decomposition Products	No additional hazardous decomposition products were identified other than the combustion products identified in Section 5 of this MSDS.

SECTION 11. TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

Toxicity Data

Gasoline
VAPOR (TELo) Acute: 140 ppm (Human) (8 hours) - Mild eye irritant.
VAPOR (TELo) Acute: 500 ppm (Human) (1 hour) - Moderate eye irritant.
INHALATION (TCLo) Acute: 900 ppm (Human) (1 hour) - CNS and pulmonary effects.
DERMAL (TDLo) Acute: 53 mg/kg (Human) - Skin allergy effects.
INHALATION (LC50) Acute: 101,200 ppm (Rat, Mouse, & Guinea Pig) (5 minutes).

A major epidemiological study concluded that there was no increased risk of kidney cancer associated with gasoline exposures for petroleum refinery employees or neighboring residents. Another study identified a slight trend in kidney cancers among service station employees following a 30-year latency period. Two-year inhalation toxicity studies with fully vaporized unleaded gasoline (at concentrations of 67, 292 and 2,056 ppm in air) produced kidney damage and kidney tumors in male rats, but not in female rats or mice of either sex. Results from subsequent scientific studies suggest that the kidney damage, and probably the kidney tumor response, is limited to the male rat. The kidney tumors apparently were the result of the formation of alpha-2u-globulin, a protein unique to male rats. This finding is not considered relevant to human exposure. Under conditions of the study, there was no evidence that exposure to unleaded gasoline vapor is associated with developmental toxicity. Experimental studies with laboratory animals did suggest that overexposure to gasoline may adversely effect male reproductive performance. Also, in laboratory studies with rats, the maternal and developmental "no observable adverse effect level" (NOAEL) was determined to be 9,000 ppm (75% of the LEL value). Female mice developed a slightly higher incidence of liver tumors compared to controls at the highest concentration. In a four week inhalation study of Sprague Dawley® rats, gasoline vapor condensate was determined to induce sister chromatid exchanges in peripheral lymphocytes. IARC has listed gasoline as possibly carcinogenic to humans (Group 2B).

Pentanes, all isomers
Studies of pentane isomers in laboratory animals indicate exposure to extremely high levels (roughly 10 vol.%) may induce cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

Toluene
Effects from Acute Exposure:
Deliberate inhalation of toluene at high concentrations (e.g., glue sniffing and solvent abuse) has been associated with adverse effects on the liver, kidney and nervous system and can cause CNS depression, cardiac arrhythmias and death. Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects.

Effects from Repeated or Prolonged Exposure:
Studies of workers indicate long-term exposure may be related to impaired color vision and hearing. Some studies of workers suggest long-term exposure may be related to neurobehavioral and cognitive changes. Some of these effects have been observed in laboratory animals following repeated exposure to high levels of toluene. Several studies of workers suggest long-term exposure may be related to small increases in spontaneous abortions and changes in some gonadotropic hormones. However, the weight of evidence does not indicate toluene is a reproductive hazard to humans. Studies in laboratory animals indicate some changes in reproductive organs following high levels of exposure, but no significant effects on mating performance or reproduction were observed. Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Findings in laboratory animals were largely negative. Positive findings include small increases in minor skeletal and visceral malformations and developmental delays following very high levels of maternal exposure. Studies of workers indicate long-term exposure may be related to effects on the liver, kidney and blood, but these appear to be limited to changes in serum enzymes and decreased leukocyte counts. Studies in laboratory

animals indicate some evidence of adverse effects on the liver, kidney, thyroid, and pituitary gland following very high levels of exposure. The relevance of these findings to humans is not clear at this time.

Heptane, all isomers
n-Heptane was not mutagenic in the Salmonella/microsome (Ames) assay and is not considered to be carcinogenic.

Xylene, all isomers
Effects from Acute Exposure:
ORAL (LD_{50}), Acute: 4,300 mg/kg [Rat].
INHALATION (LC_{50}), Acute: 4,550 ppm for four hours [Rat].
DERMAL (LD_{50}), Acute: 14,100 uL/kg [Rabbit].
Overexposure to xylene may cause upper respiratory tract irritation, headache, cyanosis, blood serum changes, CNS damage and narcosis. Effects may be increased by the use of alcoholic beverages. Evidence of liver and kidney impairment were reported in workers recovering from a gross over-exposure.

Effects from Prolonged or Repeated Exposure:
Impaired neurological function was reported in workers exposed to solvents including xylene. Studies in laboratory animals have shown evidence of impaired hearing following high levels of exposure. Studies in laboratory animals suggest some changes in reproductive organs following high levels of exposure but no significant effects on reproduction were observed. Studies in laboratory animals indicate skeletal and visceral malformations, developmental delays, and increased fetal resorptions following extremely high levels of maternal exposure. Adverse effects on the liver, kidney, bone marrow (changes in blood cell parameters) were observed in laboratory animals following high levels of exposure. The relevance of these observations to humans is not clear at this time.

Ethanol
Inhalation exposure to ethanol vapor at concentrations above applicable workplace exposure levels is expected to produce eye and mucus membrane irritation. Human exposure at concentrations from 1000 to 5000 ppm produced symptoms of narcosis, stupor and unconsciousness. Subjects exposed to ethanol vapor in concentrations between 500 and 10,000 ppm experienced coughing and smarting of the eyes and nose. At 15,000 ppm there was continuous lacrimation and coughing. While extensive acute and chronic effects can be expected with ethanol consumption, ingestion is not expected to be a significant route of exposure to this product.

Benzene

ORAL (LD50):	Acute: 930 mg/kg [Rat]. 4700 mg/kg [Mouse].
INHALATION (LC50): (VAPOR):	Acute: 10000 ppm 7 hour(s) [Rat]. 9980 ppm 8 hour(s) [Mouse].

Studies of Workers Over-Exposed to Benzene:
Studies of workers exposed to benzene show clear evidence that over-exposure can cause cancer of the blood forming organs (acute myelogenous leukemia) and aplastic anemia, an often fatal disease. Studies also suggest over-exposure to benzene may be associated with other types of leukemia and other blood disorders. Some studies of workers exposed to benzene have shown an association with increased rates of chromosome aberrations in circulating lymphocytes. One study of women workers exposed to benzene suggested a weak association with irregular menstruation. However, other studies of workers exposed to benzene have not demonstrated clear evidence of an effect on fertility or reproductive outcome in humans. Benzene can cross the placenta and affect the developing fetus. Cases of aplastic anemia have been reported in the offspring of persons severely over-exposed to benzene.

Studies in Laboratory Animals:
Studies in laboratory animals indicate that prolonged, repeated exposure to high levels of benzene vapor can cause bone marrow suppression and cancer in multiple organ systems. Studies in laboratory animals show evidence of adverse effects on male reproductive organs following high levels of exposure but no significant effects on reproduction have been observed. Embryotoxicity has been reported in studies of laboratory animals but effects were

limited to reduced fetal weight and skeletal variations.

n-Hexane
This material contains n-hexane. Long-term or repeated exposure to n-hexane can cause permanent peripheral nerve damage. Initial symptoms are numbness of the fingers and toes. Also, motor weakness can occur in the digits, but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. Co-exposure to methylethyl ketone or methyl isobutyl ketone increases the neurotoxic properties of n-hexane. In laboratory studies, prolonged exposure to elevated concentrations of n-hexane was associated with decreased sperm count and degenerative changes in the testicles of rats.

Cumene
Effects from Acute Exposure:
Overexposure to cumene may cause upper respiratory tract irritation and severe CNS depression.

Effects from Prolonged or Repeated Exposure:
Studies in laboratory animals indicate evidence of adverse effects on the kidney and adrenal glands following high level exposure. The relevance of these findings to humans is not clear at this time.

Trimethylbenzenes, all isomers
Studies of Workers:
Levels of total hydrocarbon vapors present in the breathing atmosphere of these workers ranged from 10 to 60 ppm. The TCLo for humans is 10 ppm, with somnolence and respiratory tract irritation noted.

Studies in Laboratory Animals:
In inhalation studies with rats, four of ten animals died after exposures of 2400 ppm for 24 hours. An oral dose of 5 mL/kg resulted in death in one of ten rats. Minimum lethal intraperitoneal doses were 1.5 to 2.0 mL/kg in rats and 1.13 to 12 mL/kg in guinea pigs. Mesitylene (1, 3, 5 Trimethylbenzene) inhalation at concentrations of 1.5, 3.0, and 6.0 mg/L for six hours was associated with dose-related changes in white blood cell counts in rats. No significant effects on the complete blood count were noted with six hours per day exposure for five weeks, but elevations of alkaline phosphatase and SGOT were observed. Central nervous system depression and ataxia were noted in rats exposed to 5,100 to 9,180 ppm for two hours.

Ethylbenzene
Effects from Acute Exposure:
ORAL (LD50), Acute: 3,500 mg/kg [Rat].
DERMAL (LD50), Acute: 17,800 uL/kg [Rabbit].
INTRAPERITONEAL (LD50), Acute: 2,624 mg/kg [Rat].

Effects from Prolonged or Repeated Exposure:
Findings from a 2-year inhalation study in rodents conducted by NTP were as follows: Effects were observed only at the highest exposure level (750 ppm). At this level the incidence of renal tumors was elevated in male rats (tubular carcinomas) and female rats (tubular adenomas). Also, the incidence of tumors was elevated in male mice (alveolar and bronchiolar carcinomas) and female mice (hepatocellular carcinomas). IARC has classified ethyl benzene as "possibly carcinogenic to humans" (Group 2B). Studies in laboratory animals indicate some evidence of post-implantation deaths following high levels of maternal exposure. The relevance of these findings to humans is not clear at this time. Studies in laboratory animals indicate limited evidence of renal malformations, resorptions, and developmental delays following high levels of maternal exposure. The relevance of these findings to humans is not clear at this time. Studies in laboratory animals indicate some evidence of adverse effects on the liver, kidney, thyroid, and pituitary gland.

Cyclohexane
ORAL (LD50): Acute: 12705 mg/kg [Rat]. 813 mg/kg [Mouse].

Cyclohexane can cause eye, skin and mucous membrane irritation, CNS depressant and

narcosis at elevated concentrations. In experimental animals exposed to lethal concentrations by inhalation or oral route, generalized vascular damage and degenerative changes in the heart, lungs, liver, kidneys and brain were identified.

Cyclohexane has been the focus of substantial testing in laboratory animals. Cyclohexane was not found to be genotoxic in several tests including unscheduled DNA synthesis, bacterial and mammalian cell mutation assays, and in vivo chromosomal aberration. An increase in chromosomal aberrations in bone marrow cells of rats exposed to cyclohexane was reported in the 1980's. However, a careful re-evaluation of slides from this study by the laboratory which conducted the study indicates these findings were in error, and that no significant chromosomal effects were observed in animals exposed to cyclohexane. Findings indicate long-term exposure to cyclohexane does not promote dermal tumorigenesis.

Naphthalene

Studies in Humans Overexposed to Naphthalene:
Severe jaundice, neurotoxicity (kernicterus) and fatalities have been reported in young children and infants as a result of hemolytic anemia from over-exposure to naphthalene. Persons with Glucose 6-phosphate dehydrogenase (G6PD) deficiency are more prone to the hemolytic effects of naphthalene. Adverse effects on the kidney have also been reported from over-exposure to naphthalene but these effects are believed to be a consequence of hemolytic anemia, and not a direct effect.

Studies in Laboratory Animals:
Hemolytic anemia has been observed in laboratory animals exposed to naphthalene. Laboratory rodents exposed to naphthalene vapor for 2 years (lifetime studies) developed non-neoplastic and neoplastic tumors and inflammatory lesions of the nasal and respiratory tract. Cataracts and other adverse effects on the eye have been observed in laboratory animals exposed to high levels of naphthalene. Findings from a large number of bacterial and mammalian cell mutation assays have been negative. A few studies have shown chromosomal effects (elevated levels of Sister Chromatid Exchange or chromosomal aberrations) *in vitro.*

Styrene

Neurological injury associated with chronic styrene exposure include distal hypesthesia, decreased nerve conduction velocity, and altered psychomotor performance. These effects did not occur with exposures to airborne concentrations that were less than 100 ppm. Increased deaths from degenerative neurological disorders were found in a comprehensive epidemiological study of Danish reinforced plastics workers. These workers were reported to have a 2.5-fold increased risk for myeloid leukemia with clonal chromosome aberrations. Also, there are several studies that suggest potential reproductive effects in humans and experimental animals from overexposure to styrene. Styrene was not mutagenic in the standard (liquid phase) Ames Salmonella/microsome assay, but was weakly positive when tested in the vapor phase. IARC has listed styrene as possibly carcinogenic to humans (Group 2B).

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Unleaded gasoline is potentially toxic to freshwater and saltwater ecosystems. Various grades of gasoline exhibited range of lethal toxicity (LC_{100}) from 40 PPM to 100 PPM in ambient stream water with Rainbow Trout (*Salmo irideus*). A 24-hour TLm (Median Toxic Limit) was calculated to be 90 PPM with juvenile American Shad (*Squalius cephalus*). In Bluegill Sunfish (*Lepomis macrochirus*), Grey Mullet (*Chelon labrosus*) and Gulf Menhaden (*Brevoortia patronus*), gasoline exhibited a 96-hour LC_{50} of 8 PPM, 2 PPM, and 2 PPM, respectively.

Environmental Fate

Biodegradability: Readily biodegradable in aerobic conditions. Residual components most recalcitrant to biodegration are branched alkanes.

Partition Coefficient (log Kow): 2.13 to 4.85.

Photodegration: Gasoline will partition to air, with the atmospheric half-life for constituents ranging from 0.8 days to 16 days.

Stability in water: Gasoline is not readily susceptible to hydrolysis under aquatic conditions, and the constituents readily partition to air.

SECTION 13. DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Maximize material recovery for reuse or recycling. Recovered non-usable material may be regulated by US EPA as a hazardous waste due to its ignitibility (D001) and/or its toxic (D018) characteristics. Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a RCRA "hazardous waste" at the time of disposal. Transportation, treatment, storage and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact your regional US EPA office for guidance concerning case specfic disposal issues.

SECTION 14. TRANSPORT INFORMATION

The shipping description below may not represent requirements for all modes of transportation, shipping methods or locations outside of the United States.

US DOT Status A U.S. Department of Transportation regulated material.

Proper Shipping Name Gasoline, 3, UN 1203, PG II
Gasohol, 3, NA 1203, PGII (Use only for gasoline blended with less than 20% ethanol)

Hazard Class 3 DOT Class: Flammable liquid.

Packing Group II

UN/NA Number UN1203 or NA1203

Reportable Quantity A Reportable Quantity (RQ) has not been established for this material.

Placard(s)

Emergency Response Guide No. 128

MARPOL III Status Not a DOT "Marine Pollutant" per 49 CFR 171.8.

SECTION 15. REGULATORY INFORMATION

TSCA Inventory This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.

SARA 302/304 Emergency Planning and Notification The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.

SARA 311/312 Hazard Identification The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories:

Fire, Acute (Immediate) Health Hazard, Chronic (Delayed) Health Hazard

SARA 313 Toxic Chemical Notification and Release Reporting

This product contains the following components in concentrations above *de minimis* levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA:
Toluene [CAS No.: 108-88-3] Concentration: <25%
Xylene, all isomers [CAS No.: 1330-20-7] Concentration: <18%
n-Hexane [CAS No.: 110-54-3] Concentration: <8%
Benzene [CAS No.: 71-43-2] Concentration: <5%
Cumene [CAS No.: 98-82-8] Concentration: <4%
Ethylbenzene [CAS No.: 100-41-4] Concentration: <4%
1,2,4--Trimethylbenzene [CAS No.: 95-63-6] Concentration: <3%
Cyclohexane [CAS No.: 110-82-7] Concentration: <3%
Naphthalene [CAS No.: 91-20-3] Concentration: <2%
Styrene [CAS No.: 100-42-5] Concentration: <1%

CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. Chemical substances present in this product or refinery stream that may be subject to this statute are:
Toluene [CAS No.: 108-88-3] RQ = 1000 lbs. (453.6 kg) Concentration: <25%
Xylene, all isomers [CAS No.: 1330-20-7] RQ = 100 lbs. (45.36 kg) Concentration: <18%
n-Hexane [CAS No.: 110-54-3] RQ = 5000 lbs. (2268 kg) Concentration: <8%
Benzene [CAS No.: 71-43-2] RQ = 10 lbs. (4.536 kg) Concentration: <5%
2,2,4-Trimethylpentane [CAS No.: 540-84-1] RQ = 1000 lbs. (453.6 kg) Concentration: <5%
Cumene [CAS No.: 98-82-8] RQ = 5000 lbs. (2268 kg) Concentration: <4%
Ethylbenzene [CAS No.: 100-41-4] RQ = 1000 lbs. (453.6 kg) Concentration: <4%
Cyclohexane [CAS No.: 110-82-7] RQ = 1000 lbs. (453.6 kg) Concentration: <3%
Naphthalene [CAS No.: 91-20-3] RQ = 100 lbs. (45.36 kg) Concentration: <2%
Styrene [CAS No.: 100-42-5] RQ = 1000 lbs. (453.6 kg) Concentration: <1%

Clean Water Act (CWA)

This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.

California Proposition 65

This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):
Gasoline (Wholly Vaporized and Engine Exhaust), Benzene [CAS No. 71-43-3], Toluene [CAS No. 108-88-3], Ethylbenzene [CAS No.100-41-4] and Naphthalene [CAS No.91-20-3]

New Jersey Right-to-Know Label

Gasoline [NJDEP CAS No. 8006-61-9]

Additional Remarks

As minimum requirements, CITGO recommends that the following advisory information be displayed on equipment used to dispense gasoline in motor vehicles. Additional warnings specified by various regulatory authorities may be required: "DANGER: Extremely Flammable. Use as a Motor Fuel Only. No Smoking. Stop Engine. Turn Off All Electronic Equipment including Cellular Telephones. Do Not Overfill Tank. Keep Away from Heat and Flames. Do Not leave nozzle unattended during refueling. **Static Sparks Can Cause a Fire, especially when filling portable containers.** Containers must be metal or other material approved for storing gasoline. PLACE CONTAINER ON GROUND. DO NOT FILL ANY PORTABLE CONTAINER IN OR ON A VEHICLE. Keep nozzle spout in contact with the container during the entire filling operation. **Harmful or Fatal if Swallowed. Long Term-Exposure Has Caused Cancer in Laboratory Animals.** Avoid prolonged breathing of vapors. Keep face away from nozzle and gas tank. Never siphon by mouth."
WHMIS Class B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
WHMIS Class D-2B: Material causing other toxic effects (TOXIC).

SECTION 16. OTHER INFORMATION

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION

Version Number 9.1

Revision Date 10/14/2008

ABBREVIATIONS

AP: Approximately EQ: Equal >: Greater Than <: Less Than

NA: Not Applicable ND: No Data NE: Not Established

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association

IARC: International Agency for Research on Cancer

NIOSH: National Institute of Occupational Safety and Health

NPCA: National Paint and Coating Manufacturers Association

EPA: US Environmental Protection Agency

HMIS: Hazardous Materials Information System

OSHA: Occupational Safety and Health Administration

NTP: National Toxicology Program

NFPA: National Fire Protection Association

DISCLAIMER OF LIABILITY

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***** END OF MSDS *****

MATERIAL SAFETY DATA SHEET

Date : 02/13/2002

Unocal '76'
Guardol 15W/40 Motor Oil

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Unocal Guardol 15W/40

GENERIC NAME: Crankcase Oil

CHEMICAL FAMILY: Petroleum Hydrocarbon

COMPANY IDENTIFICATION

Unocal Refining & Marketing Division
1201 West 5th Street
Los Angeles, CA 90017

EMERGENCY / TECHNICAL NUMBERS

(213) 977-7589

CHEMTREC:
(800) 424-9300 (continental U.S.)
(202) 483-7616 (collect in Hawaii & Alaska)

PRODUCT INFORMATION: MSDS Requests and Product Information: (213) 977-7589

SPECIAL NOTES:

2. COMPOSITION / INFORMATION INGREDIENTS

COMPONENTS	CAS No.	OSHA Exposure Limits (PEL)	ACGIH Recommended Limits (TLV)	Percent by Weight
Oil Mist (if generated)	8012-95-1	5 mg/m^3	5 mg/m^3	n/a
Proprietary Zinc Compound	Proprietary	n/a	n/a	1.000-2.000
Hydrotreated Distillate, Heavy Paraffin	64742-54-7	5 mg/m^3	5 mg/m^3	0.0-86.000
Solvent Dewaxed Distillate, Heavy Paraffin	64742-65-0	5 mg/m^3	5 mg/m^3	0.0-86.000
Solvent Refined Distillate, Heavy Paraffin	64742-65-0	5 mg/m^3	5 mg/m^3	0.0-3.000
Trade Secret	Proprietary	n/a	n/a	9.000-13.000

COMPOSITION COMMENTS:

None.

3. HAZARDS IDENTIFICATION

PRECAUTIONARY WARNING: Used motor oil is a possible skin cancer hazard based on animal data. Liquid or vapor may ignite. Keep away from all sources of ignition. **DO NOT** pressurize, cut, weld, braze, solder, grind, or drill on or near container. "Empty" container retains residue (liquid and/or vapor) and may explode in the heat of a fire.

POTENTIAL HEALTH EFFECTS

PRIMARY ROUTE OF ENTRY: Nasal or oral

EYE: This material may cause mild eye irritation. Direct contact with the liquid or exposure to vapors or mists may cause stinging, tearing or redness.

SKIN: This material may cause mild skin irritation. Prolonged or repeated contact or exposure to vapors or mists may cause redness and burning, and drying and cracking of the skin. No harmful effects are expected from skin absorption of this material. Persons with pre-existing skin disorders may be more suceptible to the effects of this material.

INGESTION: While this material has a low degree of toxicity, ingestion of excessive quantities may cause irritation of the digestive tract.

INHALATION: While this material has a low degree of toxicity, breathing high concenttrations of vapors or mists may cause irritation of the nose and throat.

CHRONIC EFFECTS: Used motor oil is a possible skin cancer hazard based on tests in laboratory animals and has been identified as a possible carcinogen by IARC.

OTHER NOTES: It is suggested that a source of clean water be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

4. FIRST AID MEASURES

SIGNS AND SYMPTOMS OF EXPOSURE

EYE: Irritation, redness, watering

SKIN: Mild irritation, redness

INGESTION: Irritation to the digestive tract

INHALATION: Irritation to nose and/or throat

FIRST AID PROCEDURES In an emergency, have physician call Los Angeles Poison Control Center (24 hrs.) 1-800-356-3129

EYE: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

SKIN: Wipe material from skin and remove contaminated shoes and clothing. Cleanse affected area(s) thoroughly by washing with mild soap and water and, if necessary, a waterless skin cleanser. If irritation or redness develops and persists, seek medical attention.

INGESTION: No first aid is normally required; however, if swallowed, and symptoms develop, seek medical attention.

INHALATION: If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES: Flammable

FLASH POINT / METHOD USED: 419 °F (215 °C)

AUTOIGNITION: N/A

FLAMMABILITY LIMITS (% by volume in air): LEL: N/A UEL: N/A

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide (CO_2), halon, foam or water spray is recommended

NFPA RATINGS: Health 1; Flammability 1; Reactivity 0.

FIRE FIGHTING INSTRUCTIONS: This material will burn although it is not easily ignited.

UNUSUAL FIRE AND EXPLOSIVE HAZARDS: This material may burn, but will not ignite readily. If container is not properly cooled, it may explode in the heat of a fire. Vapors are heavier than air and may accumulate in low areas.

SPECIAL FIRE FIGHTING PROCEDURES: Wear appropriate protective equipment including respiratory protection as conditions warrant. Stop spill/release if it can be done without risk. Move undamaged containers from fire area if it can be done without risk. Water spray may be useful in minimizing or dispersing vapors and cooling equipment exposed to heat and flame. Avoid spreading burning liquid with water used for cooling purposes.

COMBUSTION PRODUCTS: Combustion may yeild major amounts of oxides of carbon and minor amounts of oxides of nitrogen, phosphorous, sulfur and zinc.

6. ACCIDENTAL RELEASE MEASURES

PRECAUTIONS: May ignite. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Isolate hazard area and limit entry to authorized personnel. Stop spill/release if it can be done without risk. Wear appropriate protective including respiratory protection as conditions warrant (see Section 3). Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systemsand natural waterways. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material. Notify fire authorities and appropriate federal, state and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon U.S. navigable waters, the Contiguous Zone, or adjoining shorelines, notify the National Response Center (1-800-424-8802). For highway or railway spills, contact CHEMTREC (1-800-424-9300 ConUS, or 1-202-483-7616 collect in Alaska & Hawaii).

CLEANUP MEASURES: Immediate cleanup of any spill is recommended. Spilled material may be absorbed into an appropriate absorbent material. Dispose of product in accordance with local, county, state, and federal regulations.

7. HANDLING AND STORAGE

NORMAL STORAGE: Use and store this material in cool, dry, well ventillated areas away from heat and all sources of ignition. Keep container(s) closed. Store only in approved containers. Keep away from any incompatible materials (see Section 10). Protect container(s) against physical damage. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276. The use of respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2, 3, & 4).

HANDLING: Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Use good personal hygiene practice. "Empty" containers retain residue (liquid and/or vapor) and can be dangerous. Do not pressurized, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition; they may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged and promptly shipped to the supplier or a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this product, refer to occupational safety and health administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: If current ventillation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used.

RESPIRATORY PROTECTION: The use of respiratory protection is advised when concentrations exceed the established exposure limits (see Section 2). Depending on the airborne concentration, use a respirator or gas mask with appropriate cartridges and canisters (NIOSH approved, if available) or supplied air equipment.

EYE AND FACE PROTECTION: Approved eye protection to safeguard against potential eye contact, irritation or injury is recommended.

SKIN AND HAND PROTECTION: The use of gloves impermeable to the specific material handled is advised to prevent skin contact and possible irritation. Impervious clothing should be worn as needed. It is recommended that a source of clean water be available in the work area for flushing eyes and skin.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Clear brown liquid
ODOR: Characteristic petroleum
VAPOR PRESSURE (mm Hg): Not determined
BOILING POINT: >555°F / 291°C
VISCOSITY: 109 cSt @ 40°C
SPECIFIC GRAVITY (H_2O = 1): 0.89 @ 15°C

FLASH POINT: 419°F / 215°C
VAPOR DENSITY (AIR = 1): >1
EVAPORATION RATE (BUTYL ACETATE = 1): <1
SOLUBILITY: Negligible
% VOLATILE: Negligible

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

CONDITIONS TO AVOID: Extended exposure to high temperatures may cause decomposition.

INCOMPATIBILITY WITH OTHER MATERIALS: Avoid contact with strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion may yield major amounts of oxides of carbon and minor amounts of oxides of nitrogen, phosphorous, sulfur and zinc.

HAZARDOUS POLYMERIZATION: Polymerization will not occur.