GW - 357

GENERAL CORRESPONDENCE

2004 - 2003

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

November 3, 2004

CERTIFIED MAIL
RETURN RECEIPT NO. 7001 1940 0004 7923 4900

Mr. Kyle Burns
County Road 3177 #5
Aztec, NM 87410

Dear Mr. Burns:

The New Mexico Oil Conservation Division (NMOCD) has jurisdiction over oilfield waste management facilities. The NMOCD also issues discharge permits for the type of facility you are planning in the San Juan Basin. We have a copy of your application to the U.S. Environmental Protection Agency (EPA) for an NPDES permit for your facility known as KB Waterways dated June 9, 2003. The EPA has granted the NMOCD primacy on oilfield-related discharges. Therefore, you must file an application for a discharge permit with this office.

Attached is a blank form for your use in the application. If you have any questions, contact me at (505) 476-3492 or emartin@state.nm.us

NEW MEXICO OIL CONSERVATION DIVISION

Ed Martin

Edwin E. Martin
Environmental Bureau

cc: Denny Foust, NMOCD, Aztec

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

7001 1940 0004 7923 4900

OFFICIAL USE

020

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

USPS CORONADO STATION SANTA FE NM 87508
Postmark Here
10-4-09

Sent To
KYLA BURNS

Street, Apt. No.; or PO Box No. COUNTY RD 3177 #5

City, State, ZIP+ 4 AZTEC, NM 87410

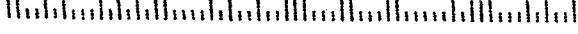
PS Form 3800, January 2001 See Reverse for Instructions

UNITED STATES POSTAL SERVICE

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION
1220 SO. ST. FRANCIS
SANTA FE, NM 87505



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

KYLE BURNS
COUNTY ROAD #3177 #5
AZTEC, NM 87410

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Kyle B — ☐ Agent ☐ Addressee

B. Received by (Printed Name) Kyle Burns

C. Date of Delivery 11/10/04

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
(Transfer from service label) 7001-1940-0004-7923-4900

To: Roger Anderson - OCD
From: Larry Giglio - EPA

Re: NPDES application KB Waterways

Attached are the applications; original submittal plus two follow-up clarifications. Also a letter from USF&WS.

Any questions, please call me: 214-665-6639
or e-mail <giglio.larry@epa.gov>

OIL CONSERVATION
DIVISION
ATTN ROGER ANDERSON
1220 So. ST. FRANCIS DRIVE
SANTA FE NM
87505

Please print or type in the unshaded areas only (fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved. OMB No. 2040-0086.

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F NM0030571 D

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

ORIGINAL SUBMITTAL

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a discharge to **waters of the U.S.**? (FORM 2A)				B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a discharge to waters of the U.S.? (FORM 2B)			
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)				D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)	X		
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)				F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)			
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)				H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)			
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)				J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)			

III. NAME OF FACILITY

1 SKIP

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
2 Burns KYLE Owner Operator	505 793 0371

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 County Rd 3177 #5

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 Aztec	NM	87410

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 SULLIVAN Rd

B. COUNTY NAME

SAN JUAN

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
6 BLOOMFIELD	NM	87413	

RECEIVED 2003 JUL [illegible] PM 2:[illegible] WQ-C CUSTOMER SERVICE BRANCH

ELEMINOK TURNKEY

EPA Form 3510-1 (8-90)

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
(specify)	(specify)
C. THIRD	**D. FOURTH**
(specify)	(specify)

VIII. OPERATOR INFORMATION

A. NAME

Kyle Burns

B. Is the name listed in Item VIII-A also the owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)

F = FEDERAL S = STATE P = PRIVATE M = PUBLIC (other than federal or state) O = OTHER (specify)

P (specify)

D. PHONE (area code & no.)

A 505 793 0371

E. STREET OR P.O. BOX

County Rd 3177 #5

F. CITY OR TOWN

B AZTEC

G. STATE NM

H. ZIP CODE 87410

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water)	D. PSD (Air Emissions from Proposed Sources)
9 N	9 P
B. UIC (Underground Injection of Fluids)	**E. OTHER (specify)**
9 U	9 (specify)
C. RCRA (Hazardous Wastes)	**E. OTHER (specify)**
9 R	9 (specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
Kyle J. Burns owner/operator	Kyle Burns	6-9-03

COMMENTS FOR OFFICIAL USE ONLY

C

Form Approved. OMB No. 2040-0086. Approval expires 8-31-98.

Please type or print in the unshaded areas only

EPA ID Number *(copy from item 1 of Form 1)*

Form 2D NPDES

EPA New Sources and New Dischargers Application for Permit to Discharge Process Wastewater

I. Outfall Location

For each outfall, list the latitude and longitude, and the name of the receiving water.

Outfall Number *(list)*	Latitude			Longitude			Receiving Water *(name)*
	Deg	Min	Sec	Deg	Min	Sec	
1	36°			107°			San Juan River

II. Discharge Date *(When do you expect to begin discharging?)*

2004

III. Flows, Sources of Pollution, and Treatment Technologies

A. For each outfall, provide a description of (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and stormwater runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

Outfall Number	1. Operations Contributing Flow *(list)*	2. Average Flow *(include units)*	3. Treatment *(Description or List Codes from Table 2D-1)*
1	Seperation of Oilfield production waste water	288,000 gpd	API 1-11 up 700gpm avg flow 288,000 gpd – Seperation of mass oil quantity, before DAF system Dissolved air flotation up to 700 gpm avg 288,000 gpd

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2003 JUN 11 PM 2:11
OWQ-C
CUSTOMER SERVICE BRANCH

B. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in item III-A. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

C. Except for storm runoff, leaks, or spills, will any of the discharges described in item III-A be intermittent or seasonal?

☐ Yes *(complete the following table)* ☑ No *(go to item IV)*

Outfall Number	1. Frequency		2. Flow		
	a. Days Per Week *(specify average)*	b. Months Per Year *(specify average)*	a. Maximum Daily Flow Rate *(in mgd)*	b. Maximum Total Volume *(specify with units)*	c. Duration *(in days)*

IV. Production

If there is an applicable production-based effluent guideline or NSPS, for each outfall list the estimated level of production (projection of actual production level, not design), expressed in the terms and units used in the applicable effluent guideline or NSPS, for each of the first 3 years of operation. If production is likely to vary, you may also submit alternative estimates (attach a separate sheet).

Year	a. Quantity Per Day	b. Units of Measure	c. Operation, Product, Material, etc *(specify)*
			uncertain - not in operation

CONTINUED FROM THE FRONT	EPA ID Number *(copy from Item 1 of Form 1)*	Outfall Number

V. Effluent Characteristics

A, and B: These items require you to report estimated amounts *(both concentration and mass)* of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instructions for that part. Data for each outfall should be on a separate page. Attach additional sheets of paper if necessary.

General Instructions *(See table 2D-2 for Pollutants)*

Each part of this item requests you to provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by the permitting authority. For all outfalls, data for pollutants in Group B should be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or NSPS or indirectly through limitations on an indicator pollutant.

1. Pollutant	2. Maximum Daily Value *(include units)*	3. Average Daily Value *(include units)*	4. Source *(see instructions)*
Oil and Grease	1ppm	.5ppm	NA

CONTINUED FROM THE FRONT	EPA ID Number *(copy from Item 1 of Form 1)*	

C. Use the space below to list any of the pollutants listed in Table 2D-3 of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

1. Pollutant	2. Reason for Discharge

VI. Engineering Report on Wastewater Treatment

A. If there is any technical evaluation concerning your wastewater treatment, including engineering reports or pilot plant studies, check the appropriate box below.

☐ Report Available ☒ No Report

B. Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.

Name	Location
NA	

EPA ID Number *(copy from item one of Form 1)*

IX. Other Information *(Optional)*

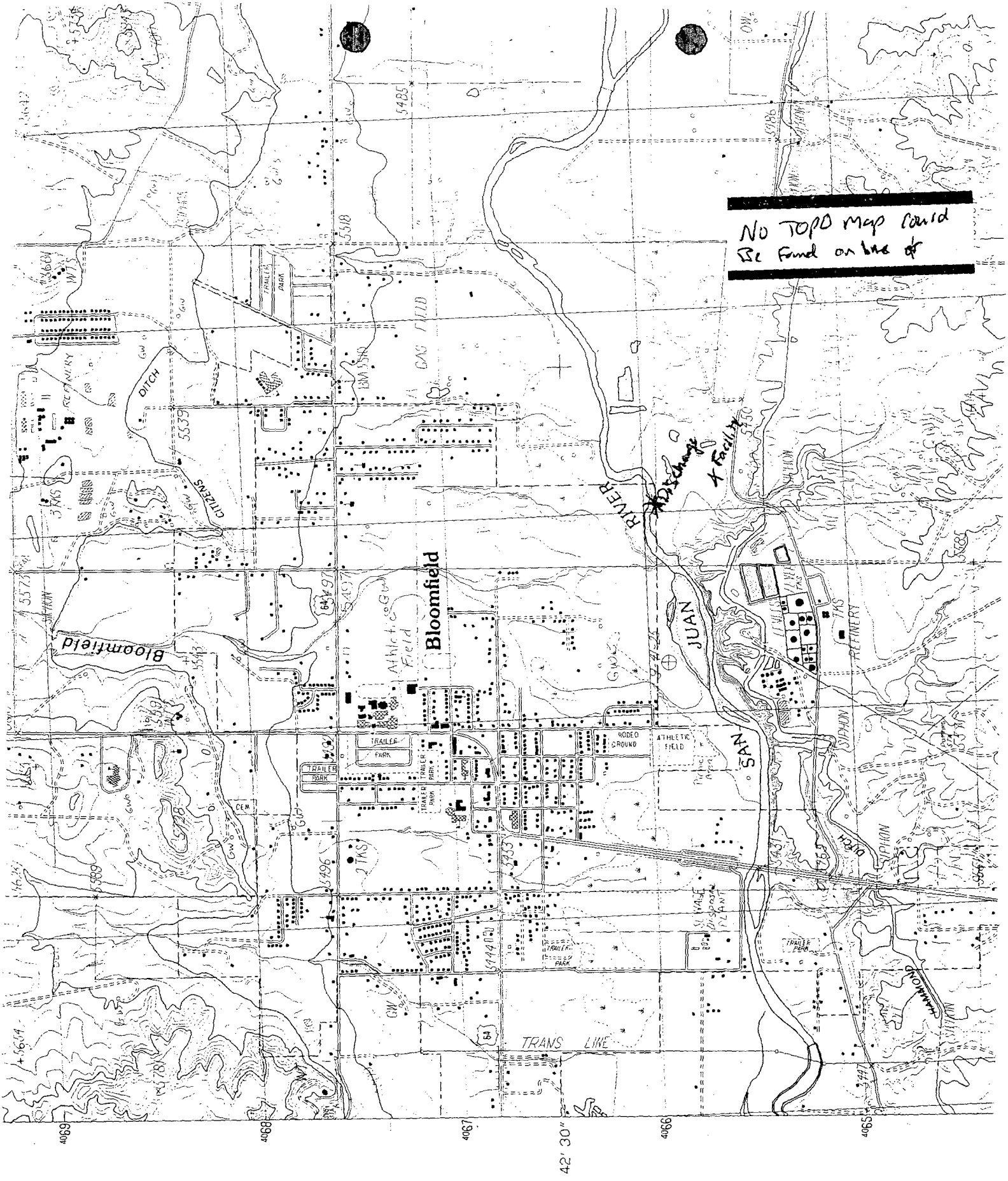
Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

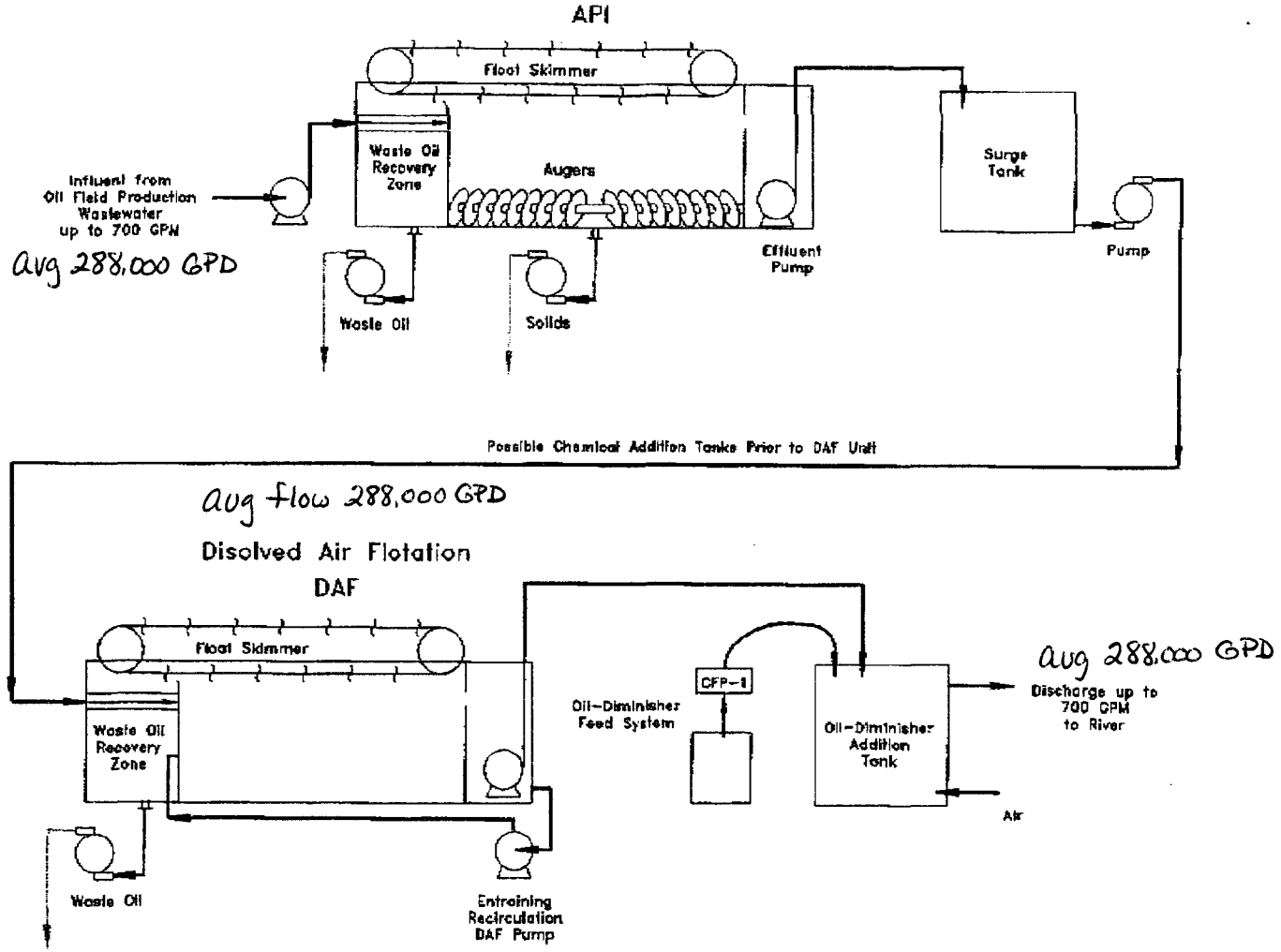
I worked in a power plant in California that discharged water into the bay. Now I am trying to implement a facility using newer, state of the art equipment. As you can see I'm working with Turnkey Solutions, Inc in designing/building a facility that is capable of meeting all regulations and guidelines. If there is any additional information needed please contact me.

VIII. Certification

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

A. Name and Official Title *(type or print)*	B. Phone No.
Kyle J. Burns owner/operater	505 334-0804
C. Signature	**D. Date Signed**
Kyle Burns	6/9/03


No TOPO map could Be found on line of
Bloomfield
Athletic Field
RIVER
SAN JUAN
RODEO GROUND
ATHLETIC FIELD
TRAILER PARK
CEM
DITCH
CITIZENS
SIPHON
TRANS LINE
42' 30"

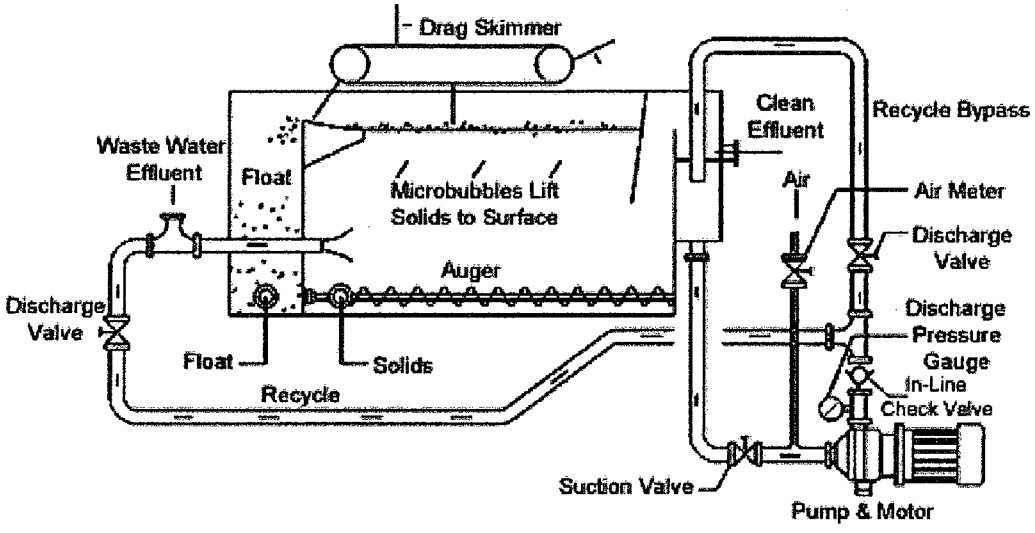


45 Whitney Road
Mahwah, NJ 07430
Web Site: www.Turnkey-Solutions-Inc.com
TURNKEY SOLUTIONS INC
Tel: 201-848-7676
Fax: 201-848-1643
E-mail: Turnkey@nkc.com

PROPOSAL:
JOB:
CLIENT: Kyle Burns
LOCATION: Texas
DRAWING TITLE: Oil & Solids Removal System w/ Chemical Treatment Preliminary Process Flow Diagram

SCALE:	DRAWN:	CAD BY:	REV.	DRAWING NO.:	SHT.	OF
NTS	5/30/03	DB	–	PF-441	–	–

TurnKey Solution's DAF design incorporates today's "state of the art" technology in DAF design. This design simplifies the DAF process, requires less startup time, less capital cost, instrumentation, labor and maintenance. The design is process friendly, providing virtually instant saturation upon system startup without equalization and complex startup procedures. Once the system is adjusted the system can be shutdown and started up again without any readjustment or equalization. Higher air transfer efficiencies are also realized due to higher saturation pressures with 12% @ 93% entrainment. TurnKey Solutions can provide both styles of DAF design depending on application and customer preferences.



DAF sizing takes into consideration many criteria for sizing:

* Flow rate
* Water temperature
* Waste characteristics
* Chemical pre-treatment
* Solids loading (LBS/HR/Ft2)
* Hydraulic loading (GPM/FT2)
* Air to solids ratio (LBS of air/LBS of Solids)

DAF's are designed on the basis of the peak flow rate expected. The flow can range from 1 to 5 gallons per minute per square foot of surface area (GPM/Ft2). Bench testing of waste stream samples is usually the preferred starting point when sizing equipment and determining proper chemical processes prior to the DAF. The chemical pretreatment will assist and improve the DAF separation process.

Chemical Pretreatment often improves DAF solids removal efficiencies. The use of chemical flocculants with DAF is based on system efficiency, application (use of DAF) and cost. Commonly used chemicals include trivalent metallic salts of iron, such as FeCl2 or FeSO4 or aluminum, such as AlSO4. Organic and inorganic polymers (cationic or anionic) are often used to enhance the DAF process.

The most commonly used inorganic polymers are the polyacrylamides. Chemical flocculant concentrations used normally range from 100 to 500 mg/l. (One mg/l in 1 million gallons per day is 8.34 lbs of material.) The wastewater pH may need to be adjusted between 4.5 and 5.5 for the ferric compounds or between 5.5 and 6.5 for the aluminum compounds using an acid such as H2SO4 or a base such as NaOH. In many applications, the DAF effluent requires pH adjustment utilizing a base such as NaOH to assure the DAF effluent pH is within the limits specified by the POTW (6-9 typically).

Attachment of most of the bubbles to solid particles can be effected through surface energies while others are trapped by the solids or by hydrous oxide flocs as the floc spreads out in the water column. Colloidal solids are normally too small to allow formation of sufficient air-particle bonding. They must first be coagulated by a chemical such as the aluminum or iron compounds mentioned above and then absorbed by the hydrous metal oxide floc generated by these compounds. Frequently, a coagulant aid is required in combination with the flocculant to agglomerate the hydrous oxide floc, increase particle size and improve the rate of flotation. Mechanical/chemical emulsions can also be broken through pH and polymer reactions.

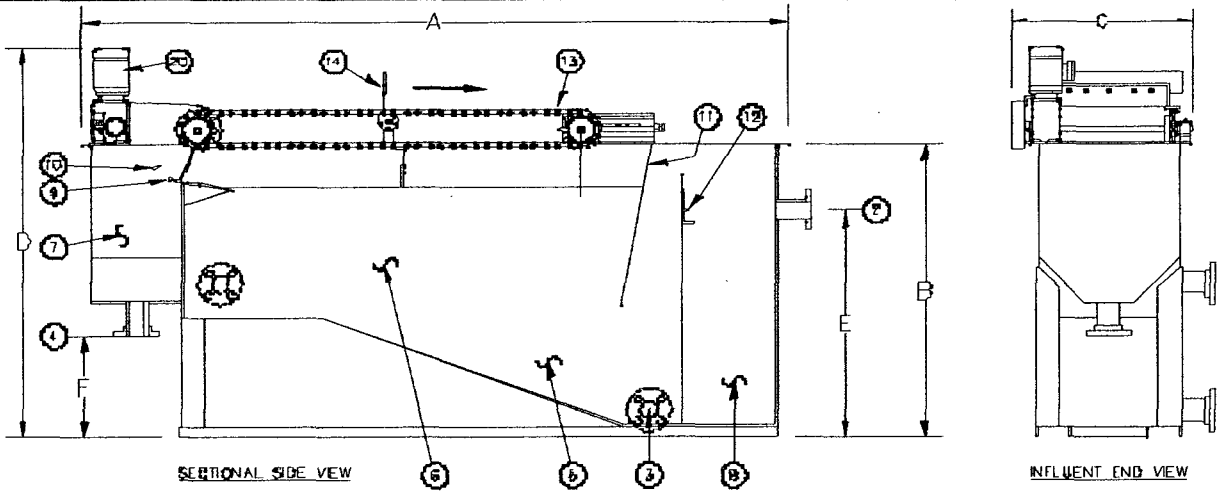
Where the float is to be used to feed animals used for human consumption, organic compounds such as chitosan, carrageenan, and lignosulfonic acid, or their derivatives can be used. Use only compounds approved by the Food and Drug Administration (FDA) Office of Veterinary Medicine.

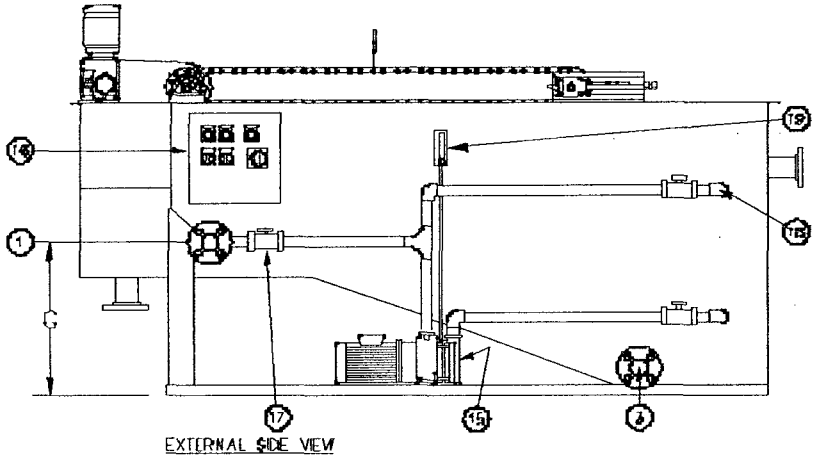
Float Dewatering DAF float often contains 2 to l0 percent solids. The solids may need to be dewatered before disposal to reduce the sludge volume by reducing water content. Float dewatering is usually performed by using one of the following technologies:

* Filter press
* Belt filter press
* Centrifuge
* Drying bed
* Vacuum precoat filter

TURNKEY SOLUTIONS INC.

INNOVATIVE INDUSTRIAL & ENVIRONMENTAL SOLUTIONS





ITEM	QTY	DESCRIPTION
1	1	3" 150# FF INLET
2	1	3" 150# FF WATER OUTLET
3	2	4" 150# FF SLUDGE OUTLET
4	1	3" 150# FF FLOAT OUTLET
5	1	SLUDGE HOPPER
6	1	SEPARATION CHAMBER
7	1	FLOAT CHAMBER
8	1	CLEAN WATER CHAMBER
9	1	FLOAT RAMP
10	1	WIPER SCRAPER

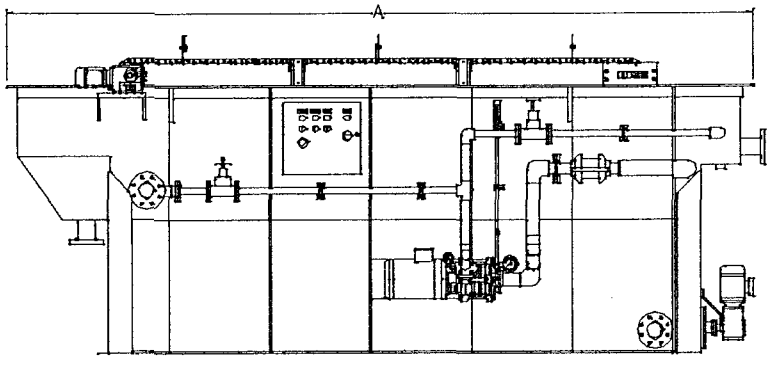
ITEM	QTY	DESCRIPTION
11	1	FLOAT BAFFLE
12	1	WATER WEIR PLATE
13	1	SKIMMER FLIGHT SYSTEM
14	4	SKIMMER WIPER
15	1	RECYCLE PUMP
16	1	CONTROL PANEL
17	1	FLOW CONTROL VALVE
18	1	RECYCLE BYPASS LINE
19	1	RECYCLE AIR CONTROL
20	1	SKIMMER GEAR DRIVE

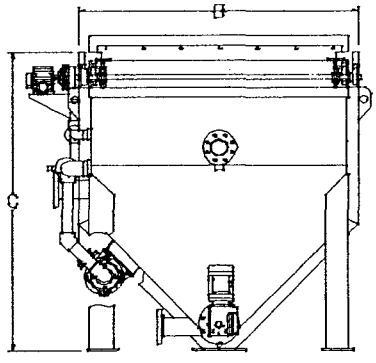
MODEL	A	B	C	D	E	F	G
DAF-08	8'-2"	4'-0"	2'-5"	5'-6"	2'-11"	1'-0"	2'-0"
DAF-12	10'-2"	4'-5"	2'-9"	5'-11"	3'-4"	1'-4"	2'-4"
DAF-18	10'-2"	4'-5"	3'-9"	5'-11"	3'-4"	1'-4"	2'-4"
DAF-24	10'-2"	4'-5"	4'-9"	5'-11"	3'-4"	1'-4"	2'-4"
DAF-36	10'-2"	4'-5"	6'-9"	5'-11"	3'-4"	1'-4"	2'-4"

www.TurnKey-Solutions-Inc.com
45 Whitney Road • Mahwah • NJ 07430-3170 • Tel:201-848-7676 • Fax: 201-848-1643 • E-mail: turnkey@nic.com

DAF/GPC Dimensions

(TurnKey's GPC unit is a DAF unit without the pump and piping shown)





Model	Dimensions			Area	Weights (lbs)		Flow
	A	B	C	Ft.2	Empty	Operating	GPM
DAF-60	15'-9"	6'-0"	6'-1"	60	5800	25,200	30 - 120
DAF-85	20'-0"	6'-0"	6'-1"	85	7900	36,700	42 - 170
DAF-100	20'-0"	6'-8"	6'-7"	100	9250	50,000	50 - 200
DAF-120	24'-3"	6'-8"	6'-7"	120	10,600	60,200	60 - 240
DAF-150	27'-3"	7'-2"	7'-0"	150	12,175	73,900	75 - 300
DAF-180	28'-3"	8'-2"	8'-0"	180	14,000	91,750	90 - 360
DAF-200	31'-1"	8'-0"	8'-0"	200	15,100	100,600	100 - 400
DAF-250	33'-10"	9'-0"	8'-5"	250	18,200	129,870	125 - 500
DAF-300	36'-0"	9'-0"	8'-5"	300	20,800	166,000	150 - 600
DAF-350	42'-0"	10'-4"	9'-0"	350	22,300	174,300	175 - 700
DAF-400	48'-0"	10'-4"	9'-0"	400	25,350	225,000	200 - 800
DAF-450	55'-0"	10'-4"	9'-0"	450	29,000	240,500	237 - 950
DAF-550	59'-0"	11'-0"	9'-0"	550	39,700	268,000	275 - 1100
DAF-600	62'-0"	11'-4"	9'-8"	600	45,950	295,000	350 - 1200

Information not for construction, Design/dimensions/weights subject to change, Flow rates are nominal

45 Whitney Road • Mahwah • NJ 07430-3170 • Tel:201-848-7676 • Fax: 201-848-1643 • E-mail: turnkey@nic.com

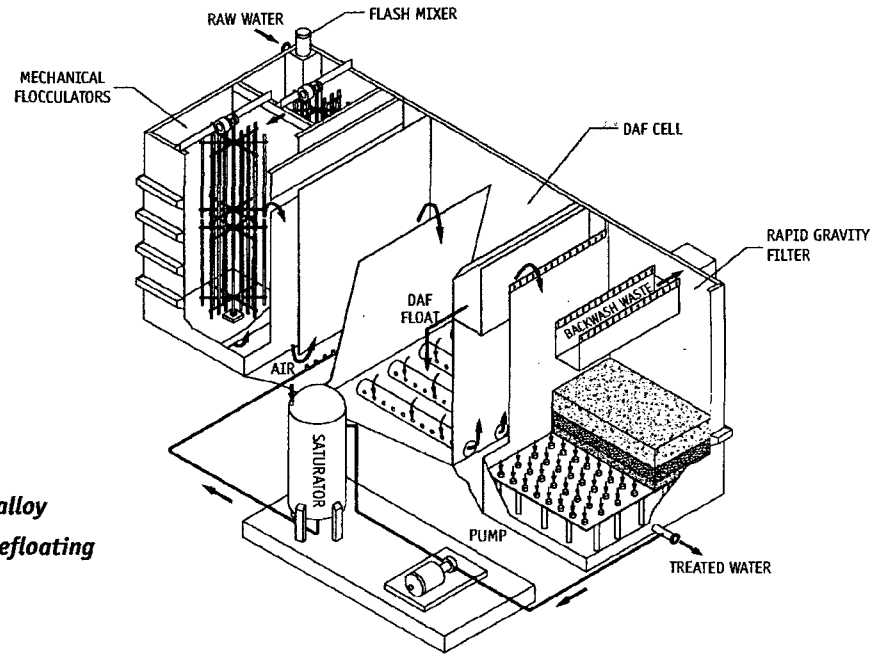
BCT

The Clearwater Co.

"DAF" Water Treatment Plant

Flocculation/Dissolved Air Flotation/Filtration

The dissolved air flotation (DAF) range of water treatment plants excel in treating lake and reservoir water containing high levels of color, algae and turbidity not exceeding about 100 NTU. The plants also provide excellent treatment of cold water with high levels of iron and manganese. The DAF process offers significant advantages including excellent algae removal, ease of operation, good tolerance to changing raw water conditions, rapid start up, low volumes of plant waste and significantly reduced building footprint.



- ***Custom Designed***
- ***Corrosion free Aluminum alloy***
- ***Mechanical or hydraulic defloating***

How it Works

A coagulant added to the raw water precipitates dissolved contaminants and encourages particles to form "floccs". Gentle agitation in the flocculator helps these to grow before they pass into the flotation zone. Here, microscopic air bubbles are injected which rapidly float the floccs to the surface. The accumulated float is skimmed off. Clarified water passes to the filter for final polishing and the filter is periodically cleaned by water or air/water backwashing. The 50 micron bubbles used for flotation are formed by recycling a small stream of clarified water through an air pressurized, packed tower saturator to specially designed nozzles at the DAF cell inlet. Here, a rapid pressure drop causes the air to come out of solution and form millions of small bubbles.

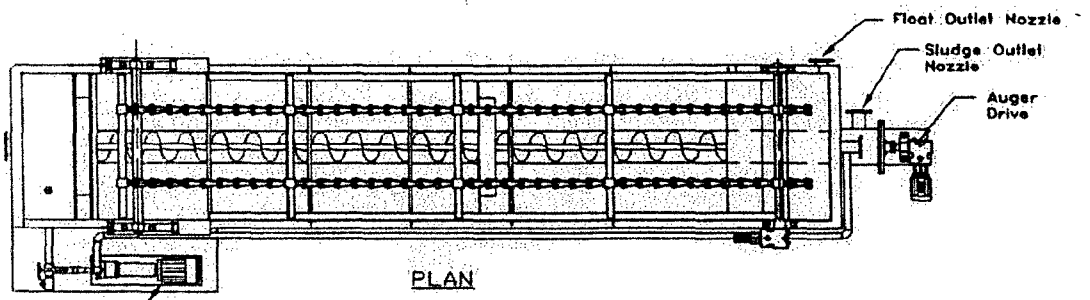
Advantages and Key Features

- Capacities to 1,000 USgpm, 5,500 m^3/d per module.
- High loading rates, small footprint and significantly lower building costs.
- Excellent color and algae removal, final turbidity less than 0.1 NTU.
- 3 to 4 log, multi-barrier protection against Giardia and Cryptosporidium.
- Low chemical use, coagulant aids often not required.
- Quick start-up and tolerant of changing raw water conditions.
- Quiet, simple and easy to operate with minimal operator intervention.
- All processes custom sized to best meet water quality goals and regulations.
- Pre-assembled and pre-tested packaged plant often saving 50% or more over in-situ construction.
- Automatic controls and monitoring systems customized to meet local needs.
- Inlet flow set at constant rate for simple operation, filter rate modulated to match inlet flow.
- Supplied complete with chemical dosing and water quality monitoring systems.

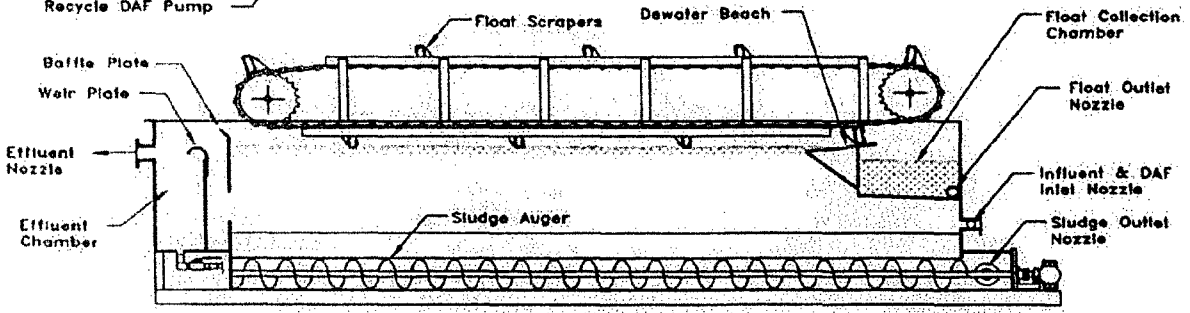
people

technology

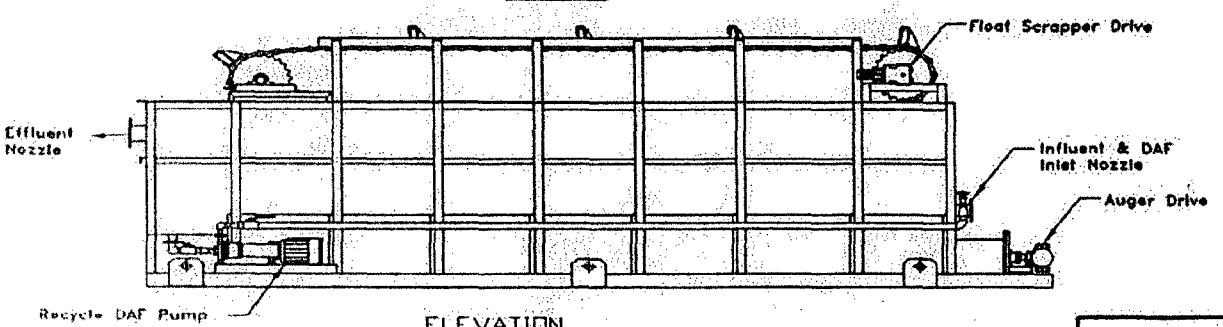
solutions



PLAN



SECTION



ELEVATION

Gravity Phase Clarifier

- Floatables are continuously removed with floating scrapers.
- Settleables are augered to the sludge outlet where an air pump can pump it to a filter press.

Dissolved Air Floatation

- This unit is similar to the GPC unit except dissolved air is added to the influent stream.
- The micro bubbles attach to solids and oils and float them to the surface.

Applications:

1. Fats, oil & grease (FOG).
2. Suspended solids.
3. Food processing waste.
4. Industrial waste.
5. Hydrocarbon oils/emulsions.
6. Other contaminants.

Unit Sizes

- Units are available in 4 gpm to 1200 gpm flow rates.

Options

- Chemical Pretreatment
- Float Dewatering
- Sludge Dewatering
- Post-treatment of Effluent

45 Whitney Road
Mahwah, NJ 07430
Tel: 201-848-7676
Fax: 201-848-1643
Web Site: www.Turnkey-Solutions-Inc.com
E-mail: Turnkey@nic.com

GPC/DAF Filtration System Features and Applications

people

technology

solutions

Typical Plant Dimensions (mm)

(Each plant is custom sized to meet the needs of each application.)

Capacity m^3/d	15 mins. flocculation DAF rate 15 m/hr Filter rate 12 m/hr			20 mins. flocculation DAF rate 12 m/hr Filter rate 10 m/hr			30 mins. flocculation DAF rate 10 m/hr Filter rate 10 m/hr		
	W	H	L	W	H	L	W	H	L
250	1370	2360	2700	1370	2360	3250	1370	2360	3970
500	1830	2360	3700	1830	2360	4510	1830	2360	5600
1000	2440	2360	5200	2440	2360	6420	2440	2360	8060
2000	3050	2900	7300	3050	2900	9060	3050	2900	11300
3000	3660	3350	8500	3660	3350	10550	3660	3350	13030
4000	3660	3660	10800	3660	3660	13430			
5000	3660	3660	13300						

Flash Mixing

- Multi chemical injection ports for coagulant, polymer, pH adjustment, etc.
- Static or powered mixers.

Flocculation

- Multi-stage hydraulic or mechanical flocculation.
- Carefully designed to minimize short circuiting.

DAF

- Inlet/outlet manifolds for even flow distribution.
- High rate process loadings to 16 m/hr in summer, 12 m/hr in winter.
- Skid mounted saturator and recycle system provide up to 10 mg/L dissolved air.
- Hydraulic or mechanical float removal options with automatic control, speed and frequency adjustment.

Filtration

- Mono, dual and multi media options.
- Air scour/water backwash for reduced wastage and improved cleaning.
- Water backwash with surface wash option.
- Nozzle and plenum type underdrain.
- "Non-gravel" underdrain systems available.

Chemical Systems

- Full range of chemical mixing and dosing systems.
- Solution tanks, mixers, dosing pumps and safety equipment.

Control Systems

- PLC based for fully automatic operation and backwash initiation and sequencing.
- SCADA system with data logging, report generation and remote monitoring/operation features available.

Water Quality Monitoring

- Analytical packages ranging from bench top testers to full on-line instrumentation are available.

Tank Construction

- Aluminum 5086-H116 and 6061, built to American Aluminum Association/CSA W47.2-M1987. Smooth, attractive, maintenance free surface. Steel and stainless steel are available.

BCA – The Clearwater Group
Engineering and Manufacturing of Water and Wastewater Purification Systems
For full information call our Toll Free Line 1-800-500-8855

Email: bca@clearwaterworld.com
Website: www.clearwaterworld.com

Water . . .
we treat it right

The Clearwater Group™

TURNKEY SOLUTIONS INC.

Oil-Diminisher

Overview

Oil-Diminisher is an enzyme based product that breaks down animal and vegetable based oils as well as hydrocarbons. It is highly effective at reducing emulsified oil levels and associated odors. This is not a microbial product and therefore avoids problems related to temperature and pH. This product contains no solvents, is non-flammable, non hazardous and environmentally friendly. It can be applied with very little labor and equipment expense. All of these features make Oil-Diminisher an essential part of your water treatment and pollution control effort.

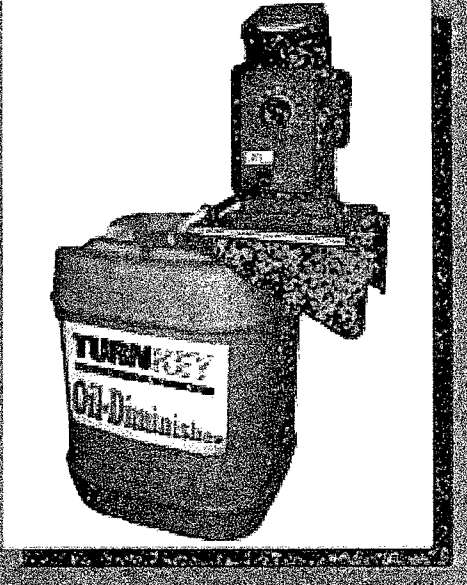
Properties

- Specific gravity 80° F: 1.025
- Density lbs/gallons: 8.58
- Flash Point: Non-flammable
- Appearance: Clear brown liquid
- Odor: Pleasant, slightly sweet
- Non-allergenic, nontoxic

Available in 5 & 50 gallon containers, we can also provide metering pumps

Applications:

- Oil/Water Separators
- Holding Lagoons
- Ponds
- Retention Basins
- Manhole areas
- Industrial Wastewater Streams
- Utility Vaults
- Trenches
- Drainage Ditches
- Washwater



Dosing

Oil-Diminisher can be added directly into the wastewater with a metering pump or by hand. In heavily contaminated systems, Oil-Diminisher may initially be applied at a rate of on (1) pint/1000 gallons/day for a week period, then the dose rate may be reduced.

15 Whitney Road, Mahwah, New Jersey 07430
www.TurnKey-Solutions-Inc.com
(T) 201-848-7676 (F) 201-848-1643
Email: TurnKey@nic.com

Please print or type in the unshaded areas only (fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved. OMB No. 2040-0086.

02

FORM 1 GENERAL — EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER: F NMDD305771 D

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

ADDITIONAL INFO

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)		X		B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge to waters of the U.S.**? (FORM 2B)		X	
C. Is this a facility which currently results in **discharges** to waters of the U.S. other than those described in A or B above? (FORM 2C)		X		D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)	X		
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X		J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP K. B. Water Ways

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title) — B. PHONE (area code & no.)

2

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3

B. CITY OR TOWN — C. STATE — D. ZIP CODE

4

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VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5

B. COUNTY NAME

C. CITY OR TOWN — D. STATE — E. ZIP CODE — F. COUNTY CODE (if known)

6

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST: 1389 (specify) Oil and Gas Field Services

B. SECOND: (specify)

C. THIRD: (specify)

D. FOURTH: (specify)

VIII. OPERATOR INFORMATION

A. NAME

B. Is the name listed in Item VIII-A also the owner? ☐ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)
F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC (other than federal or state)
O = OTHER (specify)

(specify)

D. PHONE (area code & no.)

E. STREET OR P.O. BOX

F. CITY OR TOWN

G. STATE

H. ZIP CODE

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☑ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water): 9 N — No Permits

D. PSD (Air Emissions from Proposed Sources): 9 P — No Permits

No Existing Permits

B. UIC (Underground Injection of Fluids): 9 U — No Permits

E. OTHER (specify): 9 — No Permits

(specify) No Existing Permits

C. RCRA (Hazardous Wastes): 9 R — No Permits

E. OTHER (specify): 9 — No Permits

(specify) No Existing Permits

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property bounderies. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements. No Map N/A

XII. NATURE OF BUSINESS (provide a brief description)

To treat Oil Field Waste Water and inject it into the San Juan River. Water trucks will haul the water to my Facility where I will Filter the water to meet Safety and Federal guidelines, Then discharge the clean water into the river.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED

COMMENTS FOR OFFICIAL USE ONLY

Form Approved OMB No. 2040-0086. Approval expires 8-31-98.

Please type or print in the unshaded areas only

EPA ID Number *(copy from Item 1 of Form 1)*

Form 2D NPDES

EPA New Sources and New Dischargers Application for Permit to Discharge Process Wastewater

I. Outfall Location

For each outfall, list the latitude and longitude, and the name of the receiving water.

Outfall Number (list)	Latitude Deg	Latitude Min	Latitude Sec	Longitude Deg	Longitude Min	Longitude Sec	Receiving Water (name)
001	36°			107°			San Juan River N (42.101') W (57.640)

II. Discharge Date *(When do you expect to begin discharging?)*

4-2004 (April 2004)

III. Flows, Sources of Pollution, and Treatment Technologies

A. For each outfall, provide a description of (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and stormwater runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

Outfall Number	1. Operations Contributing Flow (list)	2. Average Flow (include units)	3. Treatment (Description or List Codes from Table 2D-1)
001	Seperation of oilfield production Waste Water	288,000 gpd	API 1-U up 700 gpm avg Flow 288,000 gpd - Seperation of mass oil Before DAF System Dissolved Air Floatation up to 700 gpm Avg 288,000 gpd)

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GWQC
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Form 2D

III A

Oil Field Waste Water will be transported from the field to my water treatment facility. The first step of operation will be the API, this will handle the bulk oil separation by gravitation and air bubbles. Second step in operation will be a weir, simply for add protection. The weir is very low maintenance and will further gravitate oil. Last step is the DAF (Dissolved Air Floatation) the DAF uses tiny air bubbles to float the oil to the surface were it will be separated from the effluent water. All oil will be collected in a holding tank for resale.

The API, Weir, and DAF can handle up to 700 gpm, the avg. flow will be aprox. 288,000 gpd.

B. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item III-A. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

C. Except for storm runoff, leaks, or spills, will any of the discharges described in item III-A be intermittent or seasonal?

☐ Yes *(complete the following table)* ☑ No *(go to item IV)*

Outfall Number	1. Frequency		2. Flow		
	a. Days Per Week *(specify average)*	b. Months Per Year *(specify average)*	a. Maximum Daily Flow Rate *(in mgd)*	b. Maximum Total Volume *(specify with units)*	c. Duration *(in days)*

IV. Production

If there is an applicable production-based effluent guideline or NSPS, for each outfall list the estimated level of production (projection of actual production level, not design), expressed in the terms and units used in the applicable effluent guideline or NSPS, for each of the first 3 years of operation. If production is likely to vary, you may also submit alternative estimates (attach a separate sheet).

Year	a. Quantity Per Day	b. Units of Measure	c. Operation, Product, Material, etc *(specify)*
001			No Knob Effluent guid Lmts apply

CONTINUED FROM THE FRONT	EPA ID Number *(copy from Item 1 of Form 1)*	Outfall Number

V. Effluent Characteristics

A, and B: These items require you to report estimated amounts ***(both concentration and mass)*** of the pollutants to be discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and should be completed in accordance with the specific instructions for that part. Data for each outfall should be on a separate page. Attach additional sheets of paper if necessary.

General Instructions *(See table 2D-2 for Pollutants)*

Each part of this item requests you to provide an estimated daily maximum and average for certain pollutants and the source of information. Data for all pollutants in Group A, for all outfalls, must be submitted unless waived by the permitting authority. For all outfalls, data for pollutants in Group B should be reported only for pollutants which you believe will be present or are limited directly by an effluent limitations guideline or NSPS or indirectly through limitations on an indicatpr pollutant.

1. Pollutant	2. Maximum Daily Value *(include units)*	3. Average Daily Value *(include units)*	4. Source *(see instructions)*
Oil and Gas	15ppm	0ppm	Equipment Design
Grease	15ppm	0ppm	Equipment Design

CONTINUED FROM THE FRONT	EPA ID Number *(copy from Item 1 of Form 1)*	

C. Use the space below to list any of the pollutants listed in Table 2D-3 of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

1. Pollutant	2. Reason for Discharge
Oil, Gas, Grease,	The Nature of my Business will be, Separation of Oil Field Waste Waters, The Equipment will have Monitors and Trip alarms to prevent these pollutants from Over exceiding Limitation. However it is possable in reality to have trace amount be present in the Effluent Stream.

VI. Engineering Report on Wastewater Treatment

A. If there is any technical evaluation concerning your wastewater treatment, including engineering reports or pilot plant studies, check the appropriate box below.

☐ Report Available ☐ No Report

B. Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.

Name	Location

ADDITIONAL INFO

KYLE BURNS
CR 3177 #5
AZTEC, NM 87410

FACSIMILE TRANSMITTAL SHEET

TO: EPA **Attn: Larry Giglio**	FROM: KYLE J. BURNS
	DATE: AUGUST 10, 2004
FAX NUMBER: 214.665.7373	TOTAL NO. OF PAGES INCLUDING COVER: 10
PHONE NUMBER:	SENDER'S REFERENCE NUMBER: 505-334-0804 / CELL 505-793-0371
RE: **6WQPP**	Your reference number: Fax 505.325.8228

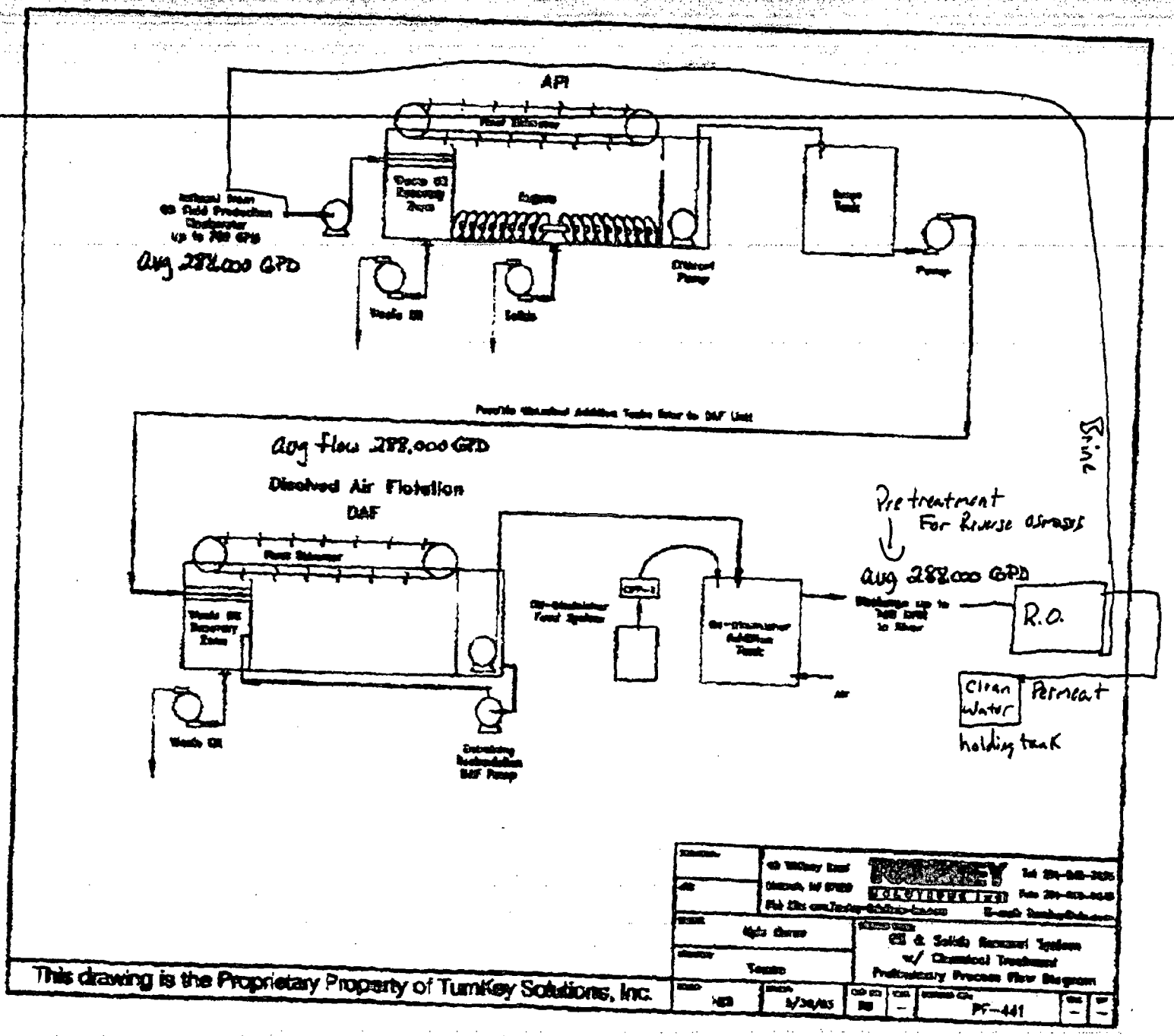
X PLEASE REPLY

NOTES/COMMENTS:

Larry, here is the MSDS on oil diminisher, the implemented RO to the site diagram and some additional information. Please contact me if you have any questions or if the fax is not legible.

Thanks,

Kyle



This drawing is the Proprietary Property of TurnKey Solutions, Inc.

Oil & Solids Recovery System w/ Chemical Treatment	
Preliminary Process Flow Diagram	
PF-441	

Material Safety Data Sheet

OIL-DIMINISHER **MSDS No. OD**

Date of Preparation: 03/09/01 Revision: Orig

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Oil-Diminisher
Chemical Formula: Proprietary.
CAS Number: N/A
Other Designations: Liquid mixed enzymes.
General Use: Catalytic bio-oxidation of organic contaminants and odor control in aqueous systems.
Manufacturer: TurnKey Solutions, Inc. 45 Whitney Road, Mahwah, NJ 07430, Tel. 201-848-7676, Fax 201-848-1643 (emergency/informational telephone/fax numbers).

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt *or* % vol
Oil-Diminisher is a product containing human-safe ingredients which form active enzyme entities that catalyze bio-oxidation of wide-ranging organic contaminants in aqueous systems. Oil-Diminisher is stabilized against bacteria-induced degradation	N/A	100%

Trace Impurities: None.

Ingredient	OSHA PEL TWA	OSHA PEL STEL	ACGIH TLV TWA	ACGIH TLV STEL	NIOSH REL TWA	NIOSH REL STEL	NIOSH IDLH
Mixed enzymes & surface active compounds.	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

HMIS
H 0
F 0
R 0

PPE†
†See. I

Potential Health Effects

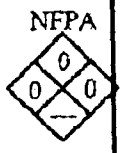
Primary Entry Routes: By ingestion and through skin contact.
Target Organs: None known.
Acute Effects
Inhalation: None.
Eye: Possible mild and temporary irritation.
Skin: Drying and defatting of contacted skin surfaces.
Ingestion: Mild gastrointestinal irritation with possible nausea and diarrhea.
Carcinogenicity: IARC, NTP, and OSHA do not list Oil-Diminisher as a carcinogen.
Medical Conditions Aggravated by Long-Term Exposure: None known.
Chronic Effects: There are no known chronic effects.

Section 4 - First Aid Measures

Inhalation: In the improbable event of product mist inhalation, remove the affected individual to fresh air and provide artificial respiration as required. Obtain medical attention.
Eye Contact: Flush thoroughly with water for five minutes and obtain medical attention if irritation of eye membranes persists.
Skin Contact: Wash contacted areas with soap and water and apply emollient skin cream to minimize dryness.
Ingestion: Drink several glasses of water. Obtain medical attention if gastrointestinal irritation, nausea or diarrhea persist.
After first aid, get appropriate in-plant, paramedic, or community medical support if exposure symptoms persist.
Note to Physicians: Under normal use and human exposure conditions, the product is considered nontoxic, nonhazardous and non-allergenic.
Special Precautions/Procedures: None.

MSDS No. OD OIL-DIMINSHER Revision: Orig.

Section 5 - Fire-Fighting Measures



Flash Point: None.
Flash Point Method: N/A
Burning Rate: N/A
Autoignition Temperature: N/A
LEL: N/A
UEL: N/A
Flammability Classification: Nonflammable.
Extinguishing Media: N/A
Unusual Fire or Explosion Hazards: None.
Hazardous Combustion Products: Thermal oxidative decomposition of the product may release toxic fumes of CO, CO_2 and NO_x.
Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.
Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.

Section 6 - Accidental Release Measures

Spill /Leak Procedures:
Small Spills: Flush small spills of five gallons or less with water to a sanitary sewer.
Large Spills
Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways
Cleanup: Use vacuum or absorbent methods to recover bulk of spilled material. Flush residual spilled product to a sanitary sewer.
Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 7 - Handling and Storage

Handling Precautions: Wear appropriate eye and glove protection to minimize exposure.
Storage Requirements: Do not store with oxidizing materials, at temperatures below freezing or above 110°F, or expose to environments with a pH of < 3.0 or > 13.0.
Regulatory Requirements: None established.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls:
Ventilation: In the improbable event of product misting, provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.
Administrative Controls:
Respiratory Protection: If product misting occurs, follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. . If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.
Protective Clothing/Equipment: Wear chemically protective gloves to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.
Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.
Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove material from your shoes and clean personal protective equipment after use.
Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics

MSDS No. OD | OIL-DIMINISHER | Revision: Orig.

Section 9 - Physical and Chemical Properties

Physical State: Liquid.
Appearance and Odor: Brown with characteristic pleasant odor.
Odor Threshold: Not determined.
Vapor Pressure: < 10.0 mm Hg at 68°F (20°C).
Vapor Density (Air=1): > 1.0
Formula Weight: N/A
Density: 8.55 lbs./gallon, typical.
Specific Gravity (H_2O=1, at 4 °C): 1.025 typical.
pH: 3.85 - 4.15

Water Solubility: Complete in all proportions.
Other Solubilities: Insoluble in hydrocarbons.
Boiling Point: 212°F (Typical).
Freezing Point: 30°F (Typical).
Viscosity: Not determined.
Refractive Index: Not determined.
Surface Tension: Not determined.
% Volatile: > 50.0%.
Evaporation Rate: < 1.0 (Butyl Acetate = 1.0)

Section 10 - Stability and Reactivity

Stability: Oil-Diminisher is stable at room temperature in closed containers under normal storage and handling conditions.
Polymerization: Hazardous polymerization cannot occur.
Chemical Incompatibilities: Direct contact with oxidizing materials may degrade enzyme activity.
Conditions to Avoid: Environments with a pH < 3.0 and > 13.0.
Hazardous Decomposition Products: Thermal oxidative decomposition of Oil-Diminisher can produce CO, CO_2 and NO_x.

Section 11- Toxicological Information

Toxicity Data:

Eye Effects: As received, mild and temporary irritation of eye membranes.

Skin Effects: Drying and defatting of exposed skin surfaces, reversible with soap and water washing and emollient cream application.

Acute Inhalation Effects:
Human, inhalation, TC_{Lo}: Not established.

Acute Oral Effects:
Rat, orel, LD_{50}: Not established.
Chronic Effects: None known.
Carcinogenicity: None known.
Mutagenicity: None known
Teratogenicity: None known.

Section 12 - Ecological Information

Ecotoxicity: Specific data not established. In extreme cases of bulk product spillage into marine or land environments, some lower life-form kill-off may occur. Under these conditions, the product will not be toxic to piscine, reptilian and mammalian creatures.
Environmental Fate
Environmental Transport: Water or soil.
Environmental Degradation: Complete product biodegradation will occur within several days at environment temperatures above 60°F.
Soil Absorption/Mobility: Product will completely biodegrade within several days at above freezing temperatures, with minimal leaching, if released on soil.

Section 13 - Disposal Considerations

Disposal: Contact TurnKey Solutions, Inc., your local supplier or a licensed contractor for detailed recommendations. Recovered spilled product may be disposed of by either landfill or incineration. Follow applicable Federal, state, and local regulations.
Disposal Regulatory Requirements: None.
Container Cleaning and Disposal: Thoroughly clean empty containers with water and recycle. Do not use empty containers for food storage.

MSDS No. OD | OIL-DIMINSHER | Revision: Orig.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Cleaning Compound NOI.
Shipping Symbols: None.
Hazard Class: Nonhazardous.
ID No.: None.
Packing Group: N/A
Label: None.
Special Provisions (172.102): None.

Packaging Authorizations
a) **Exceptions:** N/A
b) **Non-bulk Packaging:** N/A
c) **Bulk Packaging:** N/A

Quantity Limitations
a) **Passenger, Aircraft, or Railcar:** None.
b) **Cargo Aircraft Only:** None.

Vessel Stowage Requirements
a) **Vessel Stowage:** None.
b) **Other:** N/A

Section 15 - Regulatory Information

EPA Regulations:
RCRA Hazardous Waste Number: Not listed (40 CFR 261.33)
RCRA Hazardous Waste Classification (40 CFR 261): Not classified
CERCLA Hazardous Substance (40 CFR 302.4) unlisted specific per RCRA, Sec 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a). CAA, Sec. 112
CERCLA Reportable Quantity (RQ): None.
SARA 311/312 Codes: None.
SARA Toxic Chemical (40 CFR 372.65): Not listed
SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed. Threshold Planning Quantity (TPQ)
OSHA Regulations:
Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Not listed
OSHA Specifically Regulated Substance (29CFR 1910): Not listed.
State Regulations: None.

Section 16 - Other Information

Prepared By: D.N. Lyman
Revision Notes: Original 3/9/01

Additional Hazard Rating Systems: None.

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TURNKEY
SOLUTIONS INC.
Oil-Diminisher

Overview

Oil-Diminisher is an enzyme based product that breaks down animal and vegetable based oils as well as hydrocarbons. It is highly effective at reducing emulsified oil levels and associated odors. This is not a microbial product and therefore is not subject to restrictions related to temperature and pH. The product contains no solvents and is non-flammable, non-hazardous and environmentally friendly. It can be applied with very little labor and equipment expense. All of these features make Oil-Diminisher an essential part of your preventative maintenance and pollution control efforts.

Properties

- Specific gravity @ 77° F: 1.06
- Density lbs/gallon: 8.85
- Flash Point: Non-flammable
- Appearance: Clear brown liquid
- Odor: Pleasant, slightly sweet
- Non-allergenic, non-toxic

Available in 5 & 30 gallon containers, we offer two brands metering pumps.

Applications:

- Oil/Water Separators
- Holding Lagoons
- Ponds
- Refinery Basins
- Manhole Areas
- Industrial Wastewater Systems
- Utility Vaults
- Trenches
- Drainage Ditches
- Wash Water

Dosing

Oil-Diminisher can be added directly into the wastewater with a metering pump or by hand. In heavily contaminated systems Oil-Diminisher may initially be applied at a rate of or (1) pint/1000 gallons/day for a week period, then the dose rate may be reduced.

Email: TurnKey@mic.com

Typical Plant Dimensions (mm)
(Each plant is custom sized to meet the needs of each application.)

Capacity m³/d	15 mins. flocculation DAF rate 15 m/hr Filter rate 12 m/hr			20 mins. flocculation DAF rate 12 m/hr Filter rate 10 m/hr			30 mins. flocculation DAF rate 10 m/hr Filter rate 10 m/hr		
	W	H	L	W	H	L	W	H	L
250	1370	2360	2700	1370	2360	3250	1370	2360	3970
500	1830	2360	3700	1830	2360	4510	1830	2360	5600
1000	2440	2360	5200	2440	2360	6420	2440	2360	8060
2000	3050	2900	7300	3050	2900	9060	3050	2900	11300
3000	3660	3350	8500	3660	3350	10550	3660	3350	13030
4000	3660	3660	10800	3660	3660	13430			
5000	3660	3660	13300						

Flash Mixing
- Multi chemical injection ports for coagulant, polymer, pH adjustment, etc.
- Static or powered mixers.

Flocculation
- Multi-stage hydraulic or mechanical flocculation.
- Carefully designed to minimize short circuiting.

DAF
- Inlet/outlet manifolds for even flow distribution.
- High rate process loadings to 16 m/hr in summer, 12 m/hr in winter.
- Skid mounted saturator and recycle system provide up to 10 mg/L dissolved air.
- Hydraulic or mechanical float removal options with automatic control, speed and frequency adjustment.

Filtration
- Mono, dual and multi media options.
- Air scour/water backwash for reduced wastage and improved cleaning.
- Water backwash with surface wash option.
- Nozzle and plenum type underdrain.
- "Non-gravel" underdrain systems available.

Chemical Systems
- Full range of chemical mixing and dosing systems.
- Solution tanks, mixers, dosing pumps and safety equipment.

Control Systems
- PLC based for fully automatic operation and backwash initiation and sequencing.
- SCADA system with data logging, report generation and remote monitoring/operation features available.

Water Quality Monitoring
- Analytical packages ranging from bench top testers to full on-line instrumentation are available.

Tank Construction
- Aluminum 5086-H116 and 6061, built to American Aluminum Association/CSA W47.2-M1987. Smooth, attractive, maintenance free surface. Steel and stainless steel are available.

people
technology
solutions

BCA – The Clearwater Group
Engineering and Manufacturing of Water and Wastewater Purification Systems
For full information call our Toll Free Line 1-800-500-8855

Email: bca@clearwaterworld.com
Website: www.clearwaterworld.com

Water . . .
we treat it right

The Clearwater Group

Chemical Pretreatment often improves DAF solids removal efficiencies. The use of chemical flocculants with DAF is based on system efficiency, application (use of DAF) and cost. Commonly used chemicals include trivalent metallic salts of iron, such as FeCl2 or FeSO4 or aluminum, such as AlSO4. Organic and inorganic polymers (cationic or anionic) are often used to enhance the DAF process.

The most commonly used inorganic polymers are the polyacrylamides. Chemical flocculant concentrations used normally range from 100 to 500 mg/l. (One mg/l in 1 million gallons per day is 8.34 lbs of material.) The wastewater pH may need to be adjusted between 4.5 and 5.5 for the ferric compounds or between 5.5 and 6.5 for the aluminum compounds using an acid such as H2SO4 or a base such as NaOH. In many applications, the DAF effluent requires pH adjustment utilizing a base such as NaOH to assure the DAF effluent pH is within the limits specified by the POTW (6-9 typically).

Attachment of most of the bubbles to solid particles can be effected through surface energies while others are trapped by the solids or by hydrous oxide flocs as the floc spreads out in the water column. Colloidal solids are normally too small to allow formation of sufficient air-particle bonding. They must first be coagulated by a chemical such as the aluminum or iron compounds mentioned above and then absorbed by the hydrous metal oxide floc generated by these compounds. Frequently, a coagulant aid is required in combination with the flocculant to agglomerate the hydrous oxide floc, increase particle size and improve the rate of flotation. Mechanical/chemical emulsions can also be broken through pH and polymer reactions.

Where the float is to be used to feed animals used for human consumption, organic compounds such as chitosan, carrageenan, and lignosulfonic acid, or their derivatives can be used. Use only compounds approved by the Food and Drug Administration (FDA) Office of Veterinary Medicine.

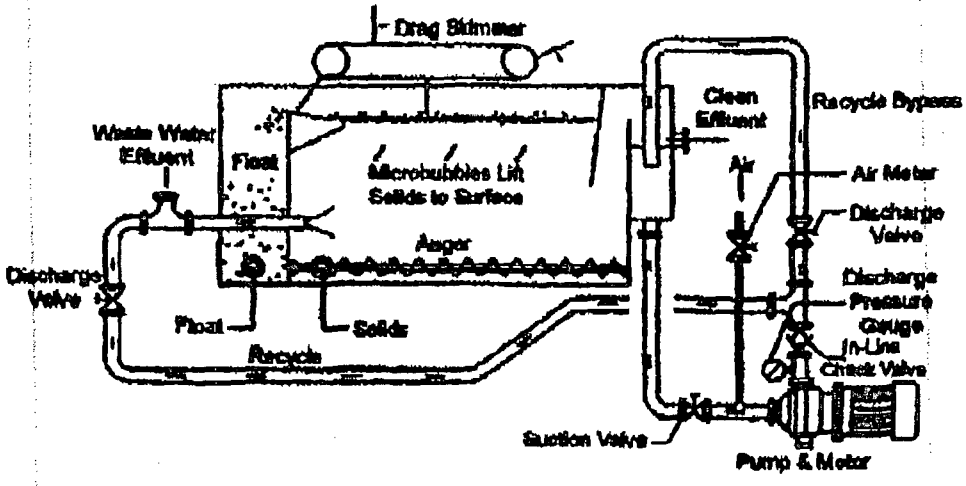
Float Dewatering DAF float often contains 2 to 10 percent solids. The solids may need to be dewatered before disposal to reduce the sludge volume by reducing water content. Float dewatering is usually performed by using one of the following technologies:

- Filter press
- Belt filter press
- Centrifuge
- Drying bed
- Vacuum precoat filter

TURNKEY

INNOVATIVE INDUSTRIAL & ENVIRONMENTAL SOLUTIONS

TurnKey Solution's DAF design incorporates today's "state of the art" technology in DAF design. This design simplifies the DAF process, requires less startup time, less capital cost, instrumentation, labor and maintenance. The design is process friendly, providing virtually instant saturation upon system startup without equalization and complex startup procedures. Once the system is adjusted the system can be shutdown and started up again without any readjustment or equalization. Higher air transfer efficiencies are also realized due to higher saturation pressures with 92% @ 93% entrainment. TurnKey Solutions can provide both styles of DAF design depending on application and customer preferences.



DAF sizing takes into consideration many criteria for sizing:

- Flow rate
- Water temperature
- Waste characteristics
- Chemical pre-treatment
- Solids loading (LBS/HR/Ft2)
- Hydraulic loading (GPM/FT2)
- Air to solids ratio (LBS of air/LBS of Solids)

DAF's are designed on the basis of the peak flow rate expected. The flow can range from 1 to 5 gallons per minute per square foot of surface area (GPM/Ft2). Bench testing of waste stream samples is usually the preferred starting point when sizing equipment and determining proper chemical processes prior to the DAF. The chemical pretreatment will assist and improve the DAF separation process.

45 Whitney Road • Mahwah • NJ 07430-3170 • Tel:201-848-7676 • Fax: 201-848-1643 • E-mail: turnkey@nb.com

6WQ-P

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

CONCERNS

July 18, 2003

Cons. # 2-22-03-I-528

Richard E. Greene, Regional Administrator
(Attn. Permits Branch)
U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, Texas 75202-2733

Dear Mr. Greene:

This responds to your June 19, 2003, letter requesting our review of a proposed discharge permit. The applicant (Kyle Burns) proposes to discharge approximately 288,000 gallons per day of separated oilfield production waste water into the San Juan River near Bloomfield, San Juan County, New Mexico. Under the permit over 1 pound of oil and grease would be discharged into the San Juan River daily. The maximum and average daily pollutant discharge values would be approximately 1.0 and 0.5 parts per million (ppm), respectively.

The discharge of oil and grease into the San Juan River may affect the federally endangered Colorado pikeminnow (*Ptychocheilus lucius*) and razorback sucker (*Xyrauchen texanus*), and their designated critical habitat. In accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), we request completion of a Biological Assessment to fully analyze potential adverse effects to these fish from issuance of the requested discharge permit. To protect other fish and wildlife resources in the project area, we offer the following comments.

The analysis and regulation of the discharged "oil and grease" may not be sufficiently quantitative to evaluate the effects of the aromatic and aliphatic components. Oil and grease consist of thousands of hydrocarbon compounds as well as hydrogen sulfide. Thus, the composition of oil and grease are highly variable, as are their physical characteristics. Depending on the composition of the oil and grease discharged, widespread impacts to biotic systems could occur. The Service recommends that all hydrocarbon, aromatic, aliphatic, and sulfide components of the oil and grease discharge be quantified, including the minute concentrations of polycyclic aromatic hydrocarbons (PAH's). The PAH content should be determined because PAHs have mutagenic and genotoxic effects. To protect fish and wildlife resources as well as human health, the PAH content in the discharge should be minimized or eliminated.

We are concerned that the discharge of 288,000 gallons per day of treated oilfield production waste water may negatively impact the biological integrity of the aquatic community in the San Juan River. In open water, oil and grease can be toxic to frogs, reptiles, fish, waterfowl, and other animals. "Oiling" of rooted or floating plants and grasses can occur, causing harm to both the plants and the animals that depend on them for food and shelter. The San Juan River fishery would also be subject to the toxic effects of oil and grease. Tainting of fish flesh by oil and grease may remain detectable by taste for over 30 days following fish exposure, and may be permanently affected by repeated discharges.

Total petroleum concentrations of 0.5 ppm can adversely effect fish eggs and larvae (Carls et al. 1999; Heintz et al. 1999; Albers 2003). Eggs and larvae are more vulnerable than adult fish to these discharges because of their limited ability to avoid the oil and water emulsion. They are also more vulnerable because they are likely to reside in areas where severe exposures occur, such as near the water surface or in shallow backwater areas. The effects of oil and grease on eggs and larvae include embryonic and larval death, abnormal development, reduced growth, premature and delayed hatching, DNA aberrations, and other cellular abnormalities (Malins and Hodgins 1981; Lockhart and Danell 1992; Carls et al. 1999; Heintz et al. 1999; Albers 2003).

Migratory birds, especially waterfowl, can be affected by oil and grease through external oiling, ingestion, egg oiling and changes in prey quality and quantity (Albers 2003). External oiling of birds disrupts feather structure, causes feather matting, and can produce eye and skin irritation. Petroleum can be ingested through feather preening, consumption of contaminated prey and water, and inhalation of evaporating oil vapors. Ingestion of oil is seldom lethal, but sublethal effects can include gastrointestinal irritation, dehydration, red blood cell damage, impaired osmoregulation, immune system suppression, inhibited reproduction, retarded growth, and abnormal parental behavior. If, for example, migratory birds came into contact with an oily petroleum film on the water's surface, it could be carried back to the nest on feathers, feet, or on nesting materials and can transfer to the shell surface of eggs (Albers 2003). Small quantities (<0.020 ppm) of some types of oil and grease are sufficient to cause embryo death, particularly during the early stages of incubation (Hoffman 1990).

We recommend that whole effluent toxicity testing be added to the permit. This testing should coincide with fish spawning seasons in the San Juan River to evaluate the potential effects on the growth, development, hatching, and mortality. We also recommend that sublethal, toxic, or adverse physical effects to fish and wildlife be reduced and, if necessary, that additional waste water treatment be considered prior to its discharge to the San Juan.

Thank you for your concern for New Mexico's wildlife and their habitats. In future correspondence regarding this project, please refer to consultation # 2-22-03-I-528. If you have any questions about the information in this letter please contact John Branstetter at the letterhead address or at (505) 346-2525 ext. 4753.

Sincerely,

Joy E. Nicholopoulos

Joy E. Nicholopoulos
State Supervisor

cc:
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico

LITERATURE CITED

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DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
DURANGO REGULATORY OFFICE
278 SAWYER DRIVE SUITE 1
DURANGO CO 81303-7995

July 22, 2003

Operations Division
Regulatory Branch

Regional Administrator, Region VI
U.S. Environmental Protection Agency
Attn: Permits Branch
1445 Ross Avenue
Dallas, Texas 75202-2733

Dear Sir/Madam:

This is in response to your June 19, 2003, request for an evaluation of the impact that the discharge described in the following permit applications will have on anchorage and/or navigation.

Applicant	Application Number
Kyle Burns	NM0030571

The receiving waters are not subject to navigation. If the proposed work involves discharges of dredged or fill material into waters of the United States, a Department of the Army permit under Section 404 of the Clean Water Act may be required. The work may be permitted by Nationwide Permit No. 12 for utility lines, including outfall and intake structures, provided the applicant complies with all permit terms and conditions. A summary of the provisions of this nationwide permit, including regional conditions, may be obtained from our web site at www.spa.usace.army.mil/reg/ Activities which are not authorized by the nationwide permit may require an individual permit.

Sincerely,

Houston L. Hannafious

Houston L. Hannafious
Chief, Durango Regulatory Office
Albuquerque District

Copy Furnished:

Kyle Burns
County Road 3177, #5
Aztec, NM 87410