

Stanislaus County Department of Environmental Resources
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Modesto, CA 95358-9492
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June 19, 2009

Ms Vicki Jones, MPA, REHS
Senior Resource Management Specialist

AERATED POND AND RINSE MUD DISPOSAL MANAGEMENT AND SAMPLING PLAN

Permit Applicant: JND Thomas Co., Inc.
22052 W. Everett Ave
Riverdale, CA 93656
Off: (559) 867-3813
Fax: (559) 867-0302

Permit Contact: Thomas Amaro, Consultant
Pacific Ag Consulting
(559) 740-9730

Dennis Thomas, President
JND Thomas Co. Inc.
(559) 250-2666

LAND OWNER: V.A. Rodden, Inc.
4000 Ellenwood Rd
Oakdale, CA 95361-8438
Off: (209) 847-0928
Fax: (209) 847-0814

Contact: William Jackson, President

PHYSICAL ADDRESS: Parcel 1(a) – 552 Usable Acres
Ellenwood, w of Rd, Waterford
(also known as 3000 Crow Rd)
APN NUMBER: 015-003-004
GEN PLAN/ZONING: AG/Exclusive Ag 40
CURRENT USE: Oats – Almonds

PHYSICAL ADDRESS: Parcel 1(b) – 250 Usable Acres
4000 Ellenwood Rd, Oakdale
APN NUMBER: 015-081-048
GEN PLAN/ZONING: AG/Exclusive Ag 40
CURRENT USE: Oats – Almonds

LAND OWNER:

Lloyd T Prothers
3401 Shawnee Dr., Apt #47
Modesto, CA 95350
Off: (209) 847-0928

LEESEE:

Jeff McPhee
727 Wakefield Ct.
Oakdale, CA 95361
Off: (209) 847-4171
Cell: (209)

Contact:

Jeff McPhee

Jeff McPhee

PHYSICAL ADDRESS:

APN NUMBER:

GEN PLAN/ZONING:

CURRENT USE:

Parcel 3(a) – 68 Usable Acres

28 Mile E of Rd, Valley Home

002-009-005

AG/Exclusive Ag

Oats

Parcel 3(b) – 258 Usable Ac

Sonora S of RD, Oakdale

002-021-011

AG/Exclusive

Oats

PHYSICAL ADDRESS:

APN NUMBER:

GEN PLAN/ZONING:

CURRENT USE:

Parcel 3(c) – 373 Usable Acres

Frankenheimer W of Rd, Oakdale, CA

002-021-048

AG/Exclusive Ag 40

Oats – Almonds

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Section 1.1 Background and General Information

Pacific Ag Consulting on behalf of JND Thomas Co., Inc. in conjunction with Con Agra Foods – Oakdale (ConAgra) has prepared this Aerated Pond and Rinse Mud Disposal Management and Sampling Plan for approval by Stanislaus County and implementation. This document utilizes data and information prepared by Dunn Environmental Inc. on behalf of ConAgra for a similar permit application dated June 2009, DE Project No. 102-15, Revision 3.

Dunn Environmental Inc. (DE) developed ConAgra Foods plan in a similar manner as the Report of Waste Discharge (ROWD) for a Waiver of Waste Discharge Requirements (WDRs), as per the Central Valley Regional Water Quality Control Board (RWQCB) Resolution No. R5-2003-008. Specific elements have been added to comply with the Stanislaus County Food Processing By-Products Use Program. This program was revised in May 2006 and the Manual of Best Practices for Application of Food By-Products on Farmlands was issued on June 29, 2007. Regulations for the Use of Food Processing By-Products in Stanislaus County for Permitted Use Sites have been utilized to develop this plan and will be followed specifically.

The Aerated Pond and Rinse Mud Disposal Management and Sampling Plan prepared for ConAgra Foods, Inc and Brichetto Cattle Co, June 2009, DE Project No 102-15, Revision 3, completed it's review and therefore, provides the basis for similar data and information provided within this plan. In general, the only significant difference would be the Permitted Use Sites (Application Property Owner), Operator and Potential Hauler. JND Thomas Co., Inc. will be the Operator and contract the same Agronomist and Certified Laboratory. Hauling will be performed by a Stanislaus County permitted Hauler.

The waste stream consists of two sources of by-product: tomato/bean plant residue mud that has settled out from the plant process and wastewater discharge (pond mud), and flume water residue (rinse mud). Both are collectively referred to as "mud" in this management plan; however these by-products will be tracked separately and handled separately as necessary. The pond mud is comprised of sediment, soil, degraded plant and fruit organics. The pond mud is typically a green to dark gray, sandy silt slurry mixture with varying content of organic and inorganic sand particles. Black muck horizons were common within the silt matrix. The rinse mud is a soil concentrate generated from the floating of tomatoes out of the truck. Rinse mud consists of solids left behind after tomatoes are floated out of the truck beds using water. This material consists of sediment, soil, and plant matter with a high water content. This proposal includes the option to amend existing crop acreage surface soils with the pond mud accumulate and rinse mud.

Section 1.2 Conditions of the Stanislaus County Approval and Questions Addressed

The soil amendments (by-products) will be hauled and applied with the following conditions and detailed within this plan:

- Extensive laboratory analytical testing has already occurred and will take place during application to assess the physical and chemical characteristics of the soil. pH target values are anticipated to range from 6 to 8 standard pH units for the pond muds. Tomato rinse muds will be allowed to range from 3.5 to 12 standard pH units.
- ConAgra will create drying areas on site when needed to minimize liquid impacts to hauling and the fields;
- Some stockpiling of mud will take place within the aerated pond and above the pond water level for drying;
- Tomato rinse mud will be generated during the tomato growing season at a rate of up to 10 truck loads per day (approximately 12 tons per load) on an intermitted basis;
- Pond mud quantities generated will range from 12 truck loads for a short trial period or intermittent dredging up to full time dredging operation at 50 truck loads per day. The maximum tonnage per load will typically be 10-20 tons per load. A polymer (anionic polyacrylamide) composed of biodegradable soil supplement that degrades entirely within 72 hours of application may be used.
- Truck traffic may occur over a 24 hour period and up to a six week duration during the full scale dredge. However, typical hours of operation will be from 6 AM to 6 PM, seven days a week.
- Haulers will turn off their trucks when loading to minimize "idling" time and follow all local and California Department of Transportation Requirements to secure and load trucks. Typically 60% percent loads may be used. The loads will be covered.
- Caustic or acid solutions or materials are prohibited.
- Mud application will be managed and controlled in accord with the written waste management plan (WMP) describing best management practices (BMP) as developed herein;
- Mud after spreading will be incorporated into the soil within 72 hours to prevent nuisance conditions (i.e. flies and odors);
- Manure may be used for additional absorption and assist in the application of material using a manure spreader.
- Equipment available on site will consist of the following: 2 – 375 hp tractors, 1- 24' disc and a smaller disc for tree access, 1- scoop loader, 2- 9yd manure spreaders and a minimum 500 gallon water truck. All equipment will be leased from one of multiple equipment dealerships or rented from a local land owner. In the event of breakdown, the equipment dealership will repair and/or replace the defective equipment;
- Minimal handling – Long term storage of by-product off site is not proposed; after dredging, direct haul to the fields is proposed;
- Waste constituents must be consumed as a benefit in soil and plant on which waste is applied and/or by crops which will be commercially harvested. The proposed application periods are in the spring and fall after harvest at agronomic rates of application;
- Hauling and application will take place over the majority of the year. Rinse muds will be applied during the tomato season;

- Hauling and application will take place over the majority of the year. Rinse muds will be applied during the tomato season;
- Site maps of the potential fields for use are provided, soil types, risks to water bodies and parcel map details are provided within each parcel detail;
- The list of adjoining parcels and owner information has been generated by the County are provided within each parcel detail;
- Hauling routes are included within each parcel detail;
- The land owners, operator and potential haulers have been provided;
- Buffers or setbacks will be created around proposed application areas. A 100 ft by-product setback will be maintained from adjacent non-owned agricultural areas. A 300 ft by-product set back will be maintained from offsite residences and public property, and a 150 ft setback will be maintained from owned on site residences.
- Haul and application equipment will consist of a vacuum tank or manure spreader and field disc tractor detailed within;
- Daily records will be kept and reported to track type, volume and follow up application issues.
- Potential nuisance conditions will be addressed in the following manner:

Excessive liquid accumulation: Excessive liquid and moisture accumulation will be significantly reduced through the “dewatering” process after dredging and prior to hauling resulting in the material being unloaded at the site having approximately no more than 32% moisture, similar to the consistency of “Jello”.

Excessive dust: In order to reduce potential dust emissions from roadway and site use, a water truck will be used as warranted.

Excessive noise: Utilized equipment will be in good working condition to minimize excessive noise. In addition, the rural setting of the proposed application areas will reduce the number of noise receptors.

Excessive Objectionable Odor: Haulers will cover loads from the ConAgra facility to the application area. To reduce objectionable odors at the application fields, spreading and disking will be the primary mitigation measure. Earlier application or re-disking will be completed if necessary. If odors persist, different staging and application area locations will be selected.

Excessive fly & vector: Similar mitigation measures used for odors will be used to reduce flies, mosquito and vector concerns. Incorporation with spreading and disking within 48 to 72 hours will reduce the potential of nuisances and odors discussed above. If nuisances persist, changed locations will be strongly considered including the use of approved spray equipment and insecticides.

Inclement weather: If rain is forecasted, application of by-product will not take place. Storage areas that drain to the ConAgra Wastewater Treatment Facility will be used for staging purposes. Stored piles will be placed on plastic and covered with plastic as necessary. A

general goal of seven days of drying (insignificant rain events resulting in no saturation) will be used prior to by-product placement on fields.

Containment:

The by-products will be contained on the site and not allowed to flow or otherwise be deposited on other surrounding properties or waterways by specific site selection of the staging areas for unloading of the side dumps prior to loading into the manure spreaders. All staging areas will be chosen according to flatness and the least slope, adhering to all setback requirements and recognizing the material will be approximately no more than 32 percent moisture upon delivery. The site manager will ultimately determine the most suited staging area that minimizes any detrimental containment issues.

In order to expedite and satisfy the requirements, this document provides a description of the waste characteristics, waste management plan and soil sampling for the proposed application of the mud incorporated into non-irrigated winter oats and the micro-irrigated almond crop land.

Note that the soil sampling plan portion of this document has been developed in accordance with the ConAgra revised Monitoring and Reporting Program No. R5-2002-0098 (MRP) dated December 12, 2003 and California Water Code Section 13267 and the Stanislaus County Food Processing Reuse Program (Ordinance and Rules). As required by the MRP, this document provides a method of obtaining soil samples to determine soil quality and amendment conditions and sources of potential elevated levels of nutrients related to the land application of mud.

The ConAgra Oakdale Facility and the existing wastewater application area are located in T2S, R10E, MDB&M in Oakdale, California within Stanislaus County. The proposed 2010 application area and future application areas are located approximately nine (9) miles away from the city of Oakdale, in typical rural agricultural areas. The soil types, proximity to surface water and proposed soil sampling locations are detailed in this document.

The purpose of this document is to provide an initial mud characterization and detailed waste management plan and propose a soil sample location rationale and sampling protocols. The discharge is associated with the numerous years of collection of the Oakdale plant water and mud discharge. The data objective of the plan is to determine the ability of crops to uptake available nutrients through assessment and soil sampling within and below the plant root mass. An extensive cropland survey has been completed and soil sampling has been conducted to assess background conditions. Additional soil sampling and documentation of field conditions, proximity to surface water discharge locations and potential water ponding areas will be completed prior to application.

crops. Young trees may have applications during all parts of the season. Several proposed land application areas will be used as detailed.

Tomato Rinse Water Mud is an undiluted semi-liquid mud, composed of soils and broken tomatoes, tomato juice that typically contains 75% water and 25% solids. The amount of rinse mud generated per day during freshpack season is estimated at 32 cubic yards or typically 6,500 gallons per day. During 2004 and 2005 tomato season, an estimated total quantity 3,079 tons and 2,843 tons, respectively, of water and mud mixture was disposed at the Dos Rios Food Processing Site in Modesto, CA. This equates to approximately three truck loads per day at nine tons per load. The total gallon estimate during the two tomato seasons were approximately 650,000 gallons. During the 2007 and 2008 Season, quantities ranged from 600 to 800 tons per month or up to 3,200 tons per year for the fresh pack season from approximately July to October of each year. Collection areas will take within the flume box, serum tanks, roll off box and liquid storage tanks in the agricultural operations on site. Application will be synchronized with the almond tree growing season and with idle periods as described above. Young tree crops may be applied throughout the year. Mature trees may be used primarily after harvest and in the spring depending on the cultural operations.

Section 1.5 ESTIMATED PRODUCTION AND SCHEDULE

JND Thomas Co., Inc is contracted to dredge, dewater, haul and land apply "Aerated Pond By-Product Mud" and "Tomato Rinse Water Mud" from a single source basin located in Oakdale, CA.

The tentative project includes rehabilitation and ongoing maintenance of the ConAgra basin:

Rehabilitation Objectives are to generate and haul approximately 700 – 880 wet tons per day for an estimated total of 40,000 to 52,500 wet tons of material.

The project is tentatively scheduled to begin in April '10, working seven days a week continuously, weather permitting or until the basin has been cleaned. If necessary, a second round of hauling could occur in September '10, working seven days a week continuously for the remainder of time required to complete the initial project.

An estimated 50 truck loads per day of semi solid material, approximately 32% moisture, will be hauled to the permitted sites. Work shall be seven days a week, possibly working 24 hours per day but tentatively scheduled to operate from 6:00 am to 6:00 pm.

On-Going Maintenance objectives include two components:

Future Maintenance to the Basin

Annual or every other year removal of an estimated total of 4,000 to 5,000 wet tons per event, resulting in 700 to 880 wet tons per day, equating to 30 to 40 truck loads per day, coinciding after the harvesting of crops.

Truck traffic may occur over a 24 hour period And up to a two week duration. However, typical hours of operation will be from 6am to 6pm, seven days a week.

Tomato Rinse Mud generated during the Tomato growing season

Daily hauling of 10 truck loads per day of approximately 12 tons per load, on an Intermittent basis during the tomato growing season.

Truck traffic may occur over a 24 hour period however, typical hours of operation will be from 6am to 6pm, seven days a week.

BENEFITS

The following plan proposes the least disruptive to the general public and most cost efficient method for addressing the accumulation of Tomato Rinse Water Mud located at ConAgra in Oakdale, CA.

- Immediately reduce the cumulative inventory of material from within the immediate vicinity of residents, thus reducing the potential source of ongoing or future nuisance issues.
- Completion of the initial Rehabilitation project will provide the basis for a much simpler and less disruptive maintenance program.
- A long term maintenance program will result in a significant reduction of traffic, odor, dust, noise or vector nuisance.
- All participants including residents, governmental agencies and ConAgra will benefit for collaborating on a mutual solution for a mutual "ongoing" problem.

TYPES OF EQUIPMENT USED TO MANAGE BY-PRODUCTS

Equipment available on site will consist of the following: 2 – 375 hp tractors, 1- 24' disc and a smaller disc for tree access, 1- scoop loader, 2- 9yd manure spreaders and a minimum 500 gallon water truck. All equipment will be leased from one of multiple equipment dealerships or rented from a local land owner. In the event of breakdown, the equipment dealership will repair and/or replace the defective equipment.

Section 1.6 CON AGRA FOODS – WRITTEN VERIFICATION LETTER

(See Con Agra Foods letter, Dated June 14, 2009)



ConAgra Foods, Inc.
Grocery Foods Group
554 S. Yosemite Avenue
Oakdale, CA 95361

TEL: 209-847-0321
FAX: 209-848-7386

June 14, 2009

Ms. Vicki Jones, MPA, REHS
Sr. Resource Management Specialist
Stanislaus County Department of Environmental Resources
3800 Cornucopia Way, Suite C
Modesto, CA 95361

RE: ConAgra Foods, Oakdale Food Processing By-Product Mud

Dear Ms. Jones:

ConAgra Foods operates a food processing facility in Oakdale California. The food processing by-product mud that has been proposed for use as a soil amendment consists of tomato and bean plant residue, sediment, soil, and degraded plant and fruit organics. To the best of our knowledge, this by-product material will not pose a risk to land, air, water, to human health, animal health, or the environment. It is our understanding that utilization of this by-product as a soil amendment is an acceptable use of said product.

Sincerely,
ConAgra Foods

Geoff Pyka
Sr. Environmental Engineer

2. PRELIMINARY WASTE CHARACTERISTICS AND MANAGEMENT ALTERNATIVES

2.1 AERATION POND WASTE CHARACTERISTICS

As indicated both fresh water and recycled water is used to process plant products which results in a relatively high organic liquid with settleable solids. The process water has lower water pH which increases the potential of metal mobilization.

ConAgra in preparation of this submittal has collected over 19 pond mud samples from the base of the aerated pond during the Fall 2007 season. The selected results are provided on Tables 1 through 3 as preliminary characteristic of the mud as a soil amendment. The laboratory results are provided in Appendix A.

Pond mud samples were taken at the ConAgra Aerated Wastewater Pond by DE employees on September 9, 2007 and October 23, 2007. Prior to each sampling event, ConAgra discharged pond water in order to increase freeboard to approximately 4 to 6 feet. Aerators were temporarily turned off for sampling. A small motor boat was provided by ConAgra for depth measurement and sampling. For each location, a depth-to-mud measurement and location waypoint were recorded. Depth-to-mud measurements were recorded using a wire sounder at specific waypoints using a hand-held Garmin Summit GPS unit. When possible, pond mud samples were collected as described below. Figure 2 provides a depiction of the depth to the mud surface measured from the top of berm. This depth was converted to top of berm based on the freeboard measurement for the respective day.

Sampling was performed using a stainless steel soil sampling tube attached to an 11 foot stainless steel extension rod. The sampling tube was pushed past the soft upper layers of sediment until firm material was encountered. The sample was then withdrawn and described according to color, consistency, and grain size. Samples were placed into plastic zip-lock bags and labeled according to waypoint number. Locations at which depth-to-mud exceeded the length of the sampler were logged for location and depth-to-mud only. Samples were periodically taken to shore and placed in an ice cooler. The samples were typically black and green in color composed of silty sand to sandy silt material with a consistency of high organic elastic mud. For each sampling event, a chain-

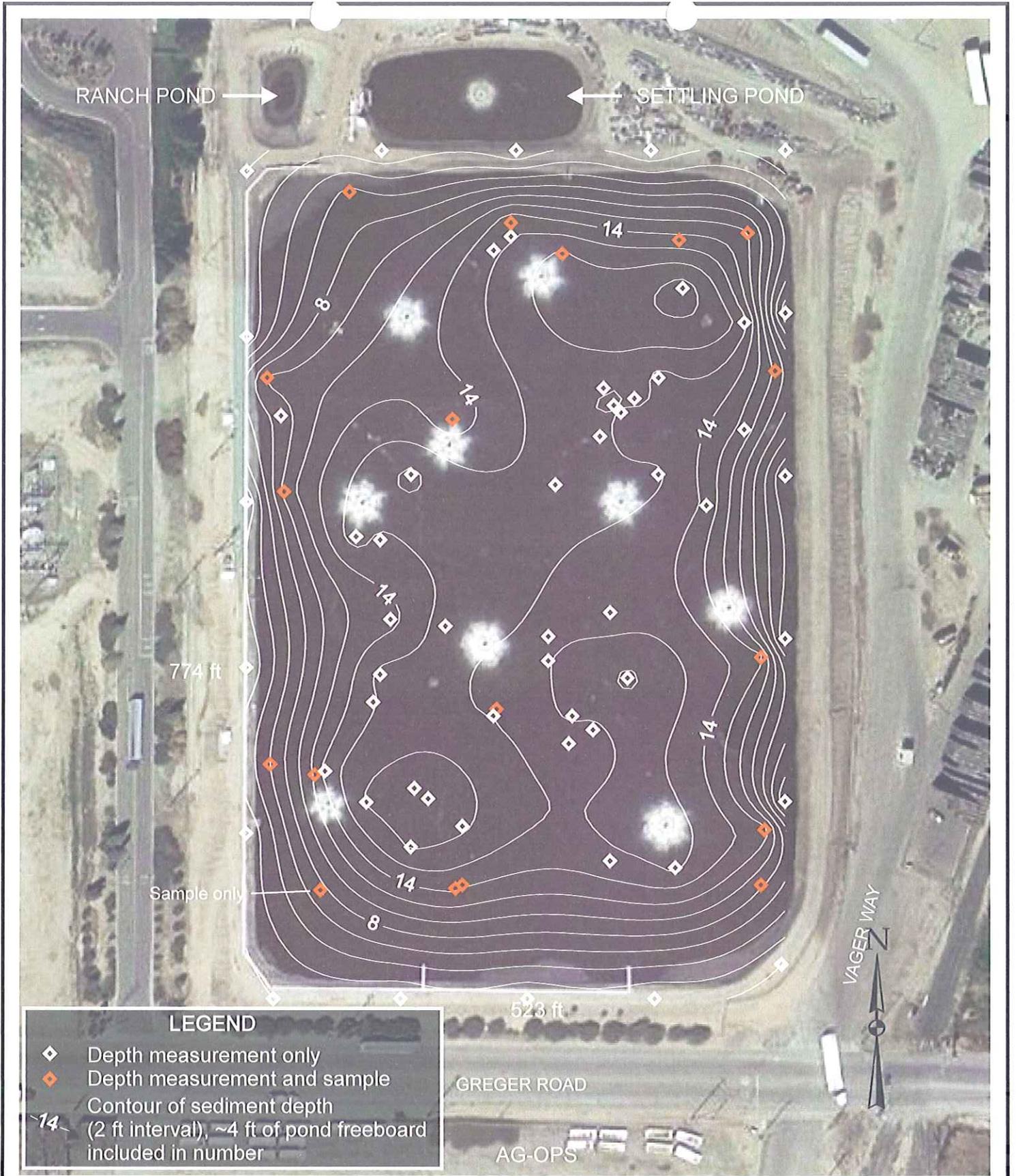
of-custody form was completed and a courier from Argon Labs/Denele Agra-Link labs of Turlock, CA picked up the samples from ConAgra the same day. A summary of the analytical data is presented on Tables 1 through 3 and laboratory data is presented in Appendix A.

The metal results are provided as CAM (California Assessment Metals) and DTPA values (Plant Available) for the 2007 aerated pond mud. CAM values reflect total values and DTPA values reflect the portion of nutrients available to plants. Total inorganic results are as follows: nitrate as N ranged from non-detect to 7.1 mg/L, pH ranged from 7.4 to 8.3, total dissolved solids ranged from 1,300 to 6,000 mg/L, specific conductance ranged from 320 to 7,200 μ S/cm, and total fixed solids ranged from 110 to 400 g/L. Total organic carbon ranged from 1,000 to 32,000 mg/kg. Average total and extractable metal results are presented in the Tables 1, 2 and 3 were compared to Title 14 Compost maximum acceptable metal concentrations on a dry weight basis. None of the analyzed total or extractable metal values are above the Title 14 Compost MCLs.

" Section 17868.2. Maximum Metal Concentrations.

(a) Compost products derived from compostable materials that contains any metal in amounts that exceed the maximum acceptable metal concentrations shown in Table shall be designated for disposal, additional processing, or other use as approved by state or federal agencies having appropriate jurisdiction.

Maximum Acceptable Metal Concentrations	
Constituent	Concentration (mg/kg) on dry weight basis
Arsenic (As)	41
Cadmium (Cd)	39
Chromium (Cr)	1200
Copper (Cu)	1500
Lead (Pb)	300
Mercury (Hg)	17
Nickel (Ni)	420
Selenium (Se)	36
Zinc (Zn)	2800



Dunn
ENVIRONMENTAL, INC.

DATE:10/29/2007

SCALE: 1":120'

PROJECT NO: 102-15

DRAWN: MM

CHECKED: PFD

FIGURE: 2

AERATED POND SAMPLING AND
MUD DEPTH MEASUREMENT CONTOURS
CONAGRA FOODS, INC
STANISLAUS COUNTY, CALIFORNIA

Table 1
Selected Analytical Parameter Results
Aerated Pond Mud
ConAgra, Oakdale

Sample Name	Nitrate as N (mg/kg)	Ammonia Nitrogen (mg/kg)	Total Kjeldahl Nitrogen (mg/kg)	Total Nitrogen as N (mg/kg)	pH	Total Dissolved Solids (mg/L)	Specific Conductance (uS/cm)	Total Fixed Solids (mg/L)	Total Organic Carbon (mg/kg)	Phosphorous as P - Bray Method (mg/kg)	Potassium (mg/kg)	% Moisture	Magnesium (mg/kg)	Calcium (mg/kg)	Sodium (mg/kg)	Chloride (mg/kg)
WP-5	<2.0	ND	460	460	7.7	-	2,500	-	1,000	1	-	43	-	-	-	-
WP-9	<2.0	ND	390	390	7.6	-	1,200	-	17,000	0.8	-	41	-	-	-	-
WP-11	<2.0	ND	180	180	7.6	-	530	-	16,000	0.2	-	33	-	-	-	-
WP-12	<2.0	ND	60	60	7.4	-	320	-	18,000	<0.2	-	38	-	-	-	-
WP-28	1.1	ND	1,700	1,700	8.2	4,100	3,000	310,000	23,000	88	440	39	6500	660	290	94
WP-30	0.6	ND	1,600	1,600	7.9	3,300	1,800	270,000	21,000	84	540	29	4100	620	210	86
WP-31	<1.0	ND	1,700	1,700	8	3,600	4,100	210,000	21,000	76	930	34	3200	630	180	57
WP-32	0.7	ND	3,000	3,000	8.2	2,400	7,000	110,000	21,000	90	820	21	2000	590	190	88
WP-43	0.4	ND	3,200	3,200	8.3	1,500	6,900	130,000	17,000	86	750	21	2100	650	170	88
WP-47	0.5	ND	2,400	2,400	8.1	2,600	5,900	140,000	20,000	94	840	22	2100	610	160	47
WP-48	0.4	ND	2,400	2,400	8.2	2,300	6,200	380,000	15,000	58	980	41	2700	580	170	63
WP-53	0.4	ND	2,800	2,800	8.2	2,200	4,600	220,000	23,000	82	940	36	3000	520	160	95
WP-59	0.7	ND	2,500	2,500	8.1	1,700	7,200	120,000	21,000	78	760	20	2200	1500	150	93
WP-61	0.5	ND	1,600	1,600	8.1	1,300	3,900	400,000	17,000	106	830	39	2400	640	160	55
WP-64	0.7	ND	1,300	1,300	7.4	6,000	2,500	200,000	32,000	46	450	31	3100	970	250	91
WP-65	0.5	ND	2,000	2,000	7.9	2,400	4,600	180,000	23,000	114	810	27	2700	650	170	75
WP-66	0.5	ND	1,200	1,200	8	1,900	5,400	130,000	19,000	82	730	22	2100	660	180	88
WP-67	0.3	ND	1,800	1,800	8	1,700	4,300	290,000	22,000	114	930	34	2700	570	190	110
WP-72	1.6	ND	2,600	2,600	8.1	2,000	2,700	300,000	27,000	122	380	40	4000	470	190	66

Notes: "-" Not analyzed; "<2.0" or "ND" indicates a non-detect

Table 2
CAM Total Metals
Units in mg/kg
Aerated Pond Mud
ConAgra, Oakdale

Sample Name	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
WP-5	<2.0	1.5	90	<1.0	<1.0	7.8	3.6	8.6	-	10	-	<0.1	1	19	<1.0	<1.0	<1.0	6.2	58
WP-9	<2.0	1.9	92	<1.0	<1.0	6.8	3.4	9.5	-	12	-	<0.1	1	20	<1.0	<1.0	<1.0	6.4	56
WP-11	<2.0	1.3	87	<1.0	<1.0	5.9	3.7	6.1	-	12	-	<0.1	1.2	18	<1.0	<1.0	<1.0	6.4	45
WP-12	<2.0	1.2	88	<1.0	<1.0	3.2	4.8	0	-	3.2	-	<0.1	<1.0	5.6	<1.0	<1.0	<1.0	7	17
WP-28	<2.0	2.1	77	<1.0	<1.0	27	4.1	43	12000	5.5	230	<0.1	1.2	25	<1.0	<1.0	<1.0	24	83
WP-30	<2.0	2	90	<1.0	<1.0	30	4.2	53	13000	5.6	180	<0.1	1	25	<1.0	<1.0	<1.0	24	76
WP-31	<2.0	2.3	89	<1.0	<1.0	29	3.9	49	11000	5.4	140	<0.1	<1.0	25	<1.0	<1.0	<1.0	24	75
WP-32	<2.0	1.5	63	<1.0	<1.0	21	2.7	37	7200	3.5	100	<0.1	1.1	16	<1.0	<1.0	<1.0	16	55
WP-43	<2.0	1.5	58	<1.0	<1.0	18	2.7	32	8000	3.3	130	<0.1	<1.0	15	<1.0	<1.0	<1.0	16	50
WP-47	<2.0	1.6	59	<1.0	<1.0	19	2.7	31	8200	3.7	130	0.3	1.1	17	<1.0	<1.0	<1.0	17	54
WP-48	<2.0	2	71	<1.0	<1.0	26	4	36	12000	4.2	220	<0.1	<1.0	22	<1.0	<1.0	<1.0	20	52
WP-53	<2.0	1.9	60	<1.0	<1.0	20	3	35	8700	4.9	130	<0.1	<1.0	22	<1.0	<1.0	<1.0	20	59
WP-59	<2.0	1.6	58	<1.0	<1.0	17	2.7	33	7200	4.2	110	<0.1	<1.0	17	<1.0	<1.0	<1.0	17	56
WP-61	<2.0	1.5	61	<1.0	<1.0	19	3.3	25	11000	4.7	130	<0.1	<1.0	18	<1.0	<1.0	<1.0	26	50
WP-64	<2.0	2.8	71	<1.0	<1.0	23	3.3	37	10000	9.9	140	<0.1	<1.0	29	<1.0	<1.0	<1.0	28	66
WP-65	<2.0	3	75	<1.0	<1.0	24	3.6	40	8900	10	160	<0.1	<1.0	31	<1.0	<1.0	<1.0	30	71
WP-66	<2.0	1.6	52	<1.0	<1.0	15	2.5	30	7700	4.3	120	<0.1	<1.0	19	<1.0	<1.0	<1.0	19	52
WP-67	<2.0	2.1	77	<1.0	<1.0	23	3.9	38	13000	8.8	210	<0.1	<1.0	24	<1.0	<1.0	<1.0	27	69
WP-72	<2.0	2.8	87	<1.0	<1.0	28	4.2	49	13000	9.2	190	<0.1	1	30	<1.0	<1.0	<1.0	31	92
Average	NA	1.9	74	NA	NA	19	3.5	31	10060.0	6.5	155	NA	1.1	21	NA	NA	NA	19	60
Title 14 Compost MCLs	NA	41	NA	NA	39	1200	NA	1500	NA	300	NA	17	NA	420	36	NA	NA	NA	2800

Notes: "-" Not analyzed; "<2.0" or similar notation indicates a non-detect

Table 3
DTPA Metals,
Units in mg/kg
Aerated Pond Mud
ConAgra, Oakdale

Sample Name	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	
WP-5	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	290	2.3	<20	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	1	<5.0	
WP-9	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	330	3.1	<20	<0.10	<1.0	1.6	<1.0	<1.0	<1.0	1.3	5.6	
WP-11	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	220	3.2	<20	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<5.0	
WP-12	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	48	<1.0	22	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	
WP-28	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	190	3.9	<20	<0.10	<1.0	1.9	<1.0	<1.0	<1.0	1.3	13	
WP-30	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	300	1.5	<20	<0.10	<1.0	1.4	<1.0	<1.0	<1.0	1.4	5.2	
WP-31	<2.0	<1.0	8.4	<1.0	<1.0	<1.0	<1.0	6.4	220	1.5	<20	<0.10	<1.0	1.4	<1.0	18	<1.0	1.5	22	
WP-32	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	4.7	180	1.3	<20	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	18	
WP-43	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	6.8	140	<1.0	<20	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	18	
WP-47	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	5.2	140	1.1	<20	<0.10	<1.0	1.5	<1.0	<1.0	<1.0	1.3	22	
WP-48	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	220	1.1	<20	<0.10	<1.0	1	<1.0	<1.0	<1.0	1.2	5.5	
WP-53	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	260	1.5	<20	<0.10	<1.0	3.2	<1.0	<1.0	<1.0	1.6	11	
WP-59	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	2.2	140	<1.0	<20	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	9.5	
WP-61	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	120	1.1	<20	<0.10	<1.0	1	<1.0	<1.0	<1.0	1.4	7	
WP-64	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	2.6	250	3.2	<20	<0.10	<1.0	6.1	<1.0	<1.0	<1.0	1.8	14	
WP-65	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	3.3	240	2.7	<20	<0.10	<1.0	4.4	<1.0	<1.0	<1.0	2.1	14	
WP-66	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	210	1.4	<20	<0.10	<1.0	2	<1.0	<1.0	<1.0	1.4	9.9	
WP-67	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	220	1.6	<20	<0.10	<1.0	1.7	<1.0	<1.0	<1.0	1.5	5.6	
WP-72	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<2.0	440	3.6	<20	<0.10	<1.0	7.2	<1.0	<1.0	<1.0	2.4	7.8	
Average	NA	NA	8.4	NA	NA	NA	NA	4.5	219	2.1	22	NA	NA	2.6	NA	18	NA	1.5	12	
Title 14 Compost MCLs	NA	41	NA	NA	39	1200	NA	1500	NA	300	NA	17	NA	420	36	NA	NA	NA	NA	2800

Notes: "-" Not analyzed; "<2.0" or similar notation indicates a non-detect

Total arsenic concentrations for mud range from 1.5 to 2.8 ppm, well below the upper levels allowed in Title 14. Refer to Table above on limits. In addition, these arsenic results are similar for background soil sample results detailed in Section 4 and on Table 6. These results are also typical for soils in the Central Valley.

2.2 RINSE MUD WASTE CHARACTERISTICS

Based on information documented by the RWQCB, ConAgra Foods and CivilTec Engineering Inc. (U-Pond Closure Report, Dated October 23, 2003), the following U-Pond summary has been provided. For 2000 to 2002 during the fresh pack season, the U-Pond was used to recycle flume water and collect rinse mud and plant residue. The U-Pond was constructed in 2000 with a width of approximately 50 feet and a travel distance of 640 feet. The depth of the pond is estimated at approximately 10 feet below plant grade. The pond capacity is 1 million gallons. Due to high percolation rates, fresh water is used to augment the recycled water. Since the tomatoes are automatically picked, the flume water contains dirt, tomato stems and tomato residue from the fresh-tomato pick and transport. No chemicals are used in the recycling or fresh water flushes. This is not a typical wastewater process for the site since processing does not take place other than the contact of source water with the raw tomatoes and byproduct.

These residues, however, contain higher amounts of organics, sulfur and nitrates which contribute to odors during the process season. A new concrete-lined settling tank has replaced the U-Pond. On August 19, 2003, ConAgra sent a letter to the RWQCB documenting the closure efforts and disposal methodology and sediment characteristics described below, and a copy of the letter is enclosed for reference.

U-pond (Rinse Mud) Waste Material Quantity and Removal – After the 2003 rainy season, the U-Pond was allowed to dry. After drying, the upper two feet of material was removed from the pond bottom for disposal. Based on the size of the pond and truck loads removed, an approximate amount ranging from 2,300 to 2,500 cubic yards was removed from the base of the pond. The material was transported and used for soil amendment on an approximate 175-acre portion of the Brichetto Ranch on 26 Mile Road in Sections 28 and 33, T1S, R10E of the MDB&M. Stanislaus County did provide approval prior to disposal. ALP spreading of Hilmar, California provided information on the cubic yards

removed. The waste material was removed in August 2003 and no additional excavation took place.

Rinse Mud Sampling Efforts

2003 Soil Sampling: On May 16, 2003, eight locations within the U-pond were sampled from beneath the two feet of excavated U-Pond material. Samples were taken by ConAgra using a post hole digger and characterized as a sandy soil. One deep excavation and seven shallow excavations were sampled. The seven shallow samples (SH-1 through SH-7) were discarded. The deep excavation (DH) was sampled every foot to a depth of five feet. Samples were labeled and submitted to Weck Laboratories in City of Industry, CA, with a duplicate sample for each depth interval. Samples were analyzed for chloride, nitrate, sulfate, alkalinity, ammonia, calcium, Electrical Conductivity (EC), copper, iron, potassium, magnesium, manganese, sodium, phosphorus, pH, Total Kjeldahl Nitrogen (TKN), Total Organic Carbon (TOC), and zinc. The results are discussed below and analytical reports are provided in Appendix A.

As indicated both fresh water and recycled water is used to rinse the tomatoes and lift them from the transport trucks to the flume catch and conveyor system. The recycled water becomes heavy with sediment during the recycle period which results potentially in the lowering of water pH which may influence the mobility of metals native to the soils and exposed metal pipes. Fresh water enhancements or treatment may be necessary to stabilize pH and reduce the potential of metal mobilization.

2004 Rinse Mud Sampling: ConAgra in preparation of a previous waiver request collected eight samples during the 2004 tomato season. The selected results are provided on Table 4 as preliminary characteristic of the rinse mud as a soil amendment. As referenced, the rinse mud samples typically consist of 75 percent water and 25 percent solids. The laboratory results are provided in Appendix A.

Table 4
Selected Rinse Mud 2004 Characteristics and 503 Metal Results
ConAgra Oakdale
Mud Plan

Sample Analysis Date	pH	Soluble Salts dS/m	Chloride Percent	Nitrogen Pounds Nutrients per Ton Wet	Boron Pounds Nutrients per Ton Wet	Zinc Pounds Nutrients per Ton Wet	Total Arsenic ppm	Total Chromium ppm
7/21/04	NA	NA	NA	4.39	0.0458	0.091	2.6	14.3
8/05/04	6.2	4.1	0.31	2.87	<0.01	0.0208	2.5	12.9
8/11/04	6.5	1.6	0.14	1.1	0.005	0.005	NA	NA
9/02/04	6.8	5.3	0.29	4.16	0.04	0.08	NA	NA
9/02/04	5.5	1.8	0.10	4.09	0.026	0.026	1.2	27.3
9/16/04	5.3	2.1	0.01	12.41	0.06	0.06	ND	36.2
9/24/04	5.5	2.4	0.06	10.08	0.073	0.049	1.5	12
10/04/04	5.7	2.5	0.32	3.82	0.0225	<0.0225	NA	NA
10/06/04	5.4	2.3	0.02	2.93	0.062	0.0312	1.5	15.9
Average Nutrients Lbs/Ton of Rinse Mud Application				5.09	0.0417	0.0454		

NA = Not Available

ND = Non Detect

The results are provided as total values for the 2004 rinse mud mixture and also reflect a portion of the nutrients that are available to the plants. Sampling in the future will include both the extractable and total results. Total inorganic results are as follows; pH ranged from 5.2 to 6.8; soluble salts ranged from 1.8 to 5.3; total nitrogen ranged from 0.47 to 2.41 percent or averaged 5.09 lbs per ton of amendment; total metal results were encountered as follows: arsenic 1.2 to 2.6 ppm, boron 14 to 119 ppm (0.04 lbs per ton of amendment) and chromium from 12.9 to 36.2 ppm.

The trends in acidic pH values toward the end of the growing season may attribute to the mobility and influence the presence of chromium and boron concentrations within the samples tested. These metal values have not exceeded cleanup goals for contaminated sites established by the State except for Arsenic.

As per the 2005 guidelines established in the California EPA, Dept. of Toxic Substances and Toxic Control, Office of Environmental and Human Health – California Human Health Screening Levels (CHHSLs), the arsenic cleanup level for contaminated sites is 0.24 ppm. Note that tomato rinse mud is not generated from a contaminated facility; and as referenced in this waiver, the rinse mud is considered as compost material and soil enhancement. As per California Code of Regulations Title 14, compost material is allowed to have arsenic levels up to 41 ppm, as referenced above.

Arsenic concentrations, provided on Table 1, for rinse mud range from 1.5 to 2.6 ppm, well under the upper levels allowed in Title 14. In addition, these arsenic results are similar for background soil sample results detailed in Section 4 and on Table 5. These results are also typical for soils in the Central Valley.

ConAgra, as per their adopted WDRs, has been approved to dispose of their tomato rinse mud during the tomato harvest season at the permitted Dos Rios Food Processing Residue Use Site at 3359 Shilo Road in Modesto, CA, owned by Lyons Investments. As referenced three to four truck loads with 2,200 gallons (> 9 tons per load) of rinse water mud per truck load is hauled to the referenced site. This plan document is in support of the local use of this rinse mud for land application. ConAgra reserves the right to continue to use other facilities and investigate alternative beneficial uses for the rinse mud mixture.

2005 and 2007 Soil Sampling Efforts for U-Pond Closure: In June 9, 2005 three test pits were completed to depths ranging from 10 feet to 16 feet. Excavations were completed using a backhoe. One background test pit and two U-Pond test pits were completed. The U-Pond test pits TP-05-1 and TP-05-02 were excavated to 16 and 15 feet in depth, respectively, and were located within the pond bed. The background test pit TP-05-03 was located approximately 50 feet to the southeast of the pond and was completed to a depth of 10 feet due to collapse. Two borings were completed in July 2007 for confirmation of soils and ground water sampling. Samples were submitted to A&L Western Agricultural Laboratories, Inc. for analysis. Please refer to the *Phase II U-Pond Investigation Report (Source Identification)*, dated September 2007 for a summary of the investigations.



Memo

To: Geoff Pyka and Shawn Zablocki, ConAgra Foods
From: Pat Dunn
Re: Additional Analytical for Mud Reuse
Date: 8/26/09

In order to address agronomic loading rates and some of the toxicity concerns raised from a series of public comments regarding the mud reuse plan, additional analyses were completed for characterization efforts as described below.

Additional 2009 Sampling Effort

As referenced in the operation plan, Dunn Environmental performed additional sampling of the Aerated Pond mud on July 14, 2009. Previous sampling efforts related to the Aerated Mud and Rinse Mud were completed in 2007 and 2004. For the 2009 sampling effort, samples were taken using 3 inch diameter Shelby tube that was pushed into the sludge and underlying sediment. The Shelby tubes were either 2.5 or 3 feet in length. Samples were then lifted out and placed in gallon plastic bags and stored on ice in coolers. If sludge was present within the sampler, the sludge was removed from the top and submitted to the lab as a separate sample. Sediment and sludge were described according to composition and color using a Munsell Color Chart. Ten sludge samples and one sediment sample were collected as summarized below to augment the 2007 sampling effort when 17 samples were collected.

Aerated Pond sediment was consistent in description. Sludge samples were high in moisture, slight odor with low plasticity organic material. The grain size was primarily silt with 0.5 to 1 mm organics with color ranging from very dark brown (10YR 2/2) to black (10YR 2/1). Most samples had a gelatinous or paste-like texture with the exception of areas where the aerators had removed sludge due to the strength of the aerator engines. The waypoints 173, 180, and 188 were void of sludge and consisted of a stiff clay-like material with poor sample return.

Rinse mud samples were collected directly from the clarifier box on site. These samples were composed of silt soils, tomato stems and broken tomatoes.

Additional 2009 Analytical Results

The additional analyses and comparisons provided are associated with metal results primarily. The Total CAM (California Assessment Metals) and DTPA values (Plant Available) for the aerated mud 2007 and the 2009 Total CAM and DI-Wet leachate method (STLC) results were compared as presented in the following tables. An additional rinse mud was collected and analyzed for the CAM17 (totals and STLCs) and pesticides.

For the 2007 and 2009 aerated mud general mineral/inorganic analyses were repeated as depicted on Table 1 and 2: pH ranged from 5.6 to 8.3 with an average of 7.9 and 6.8 for the two years respectively; total dissolved solids ranged from 1,300 to 6,000 ppm with an average of 2,600 and 2,207 ppm for the two years respectively; specific conductance averages were 3,929 to 4,238 $\mu\text{S}/\text{cm}$. Total organic carbon ranged from 600 to 32,000 ppm. When comparing inorganic results from 2007 and 2009, the following is apparent: CEC, chloride, magnesium, pH, and TOC are lower during 2009. Moisture, Total nitrogen, phosphorus, K, SAR, Na, and TKN are high for the 2009 sampling. The total nitrogen average concentrations were 1,731 ppm for 2007 versus 105,404 ppm for 2009.

For the referenced 2009 mud samples, the total CAM values indicate the total metal concentrations, DTPA values reflect the portion of nutrients available to plants and the Deionized (DI) -Wet Tests are used for special waste classification. Special waste disposal options, as per Title 22 and 27 of the California Code of Regulations (CCR), are determined based on the Total and DI-Wet leachable test results. The individual and average total, extractable and DI-Wet metal results are presented in Tables 3 through 5. Results were also compared to CCR Title 14 California Integrated Waste Management Compost regulation maximum acceptable metal concentrations. The Title 14 regulatory levels are three to ten times lower than the Title 27 special waste disposal criteria and provided on Table 3. Note that no laboratory results were reported above the total or DI-Wet extractable metal levels for the Title 14 for compost, 22 and 27 regulations. The values are significant lower than these regulatory limits. DTPA and total metal results are similar between 2007 and 2009, with the exceptions of nickel and lead

which were lower during 2009. Additionally, total barium concentrations were lower for the 2009 sampling effort.

For rinse mud, pH ranged from 5.3 to 6.8, nitrogen ranged from 0.28 to 12.41 lbs/ton of material. Zinc and boron were reported as low values. CAM 17 total metals were reported at background levels. Arsenic ranged from non-detect to 2.6 ppm and chromium was reported from 7 to 23 ppm. Pesticides were not detected. Refer to Table 6 for the summary of these results.

Note that the land application of aerated and rinse muds will be conducted based on the use of agronomic application rates and good farming practices.

Table 1 - Aerated Pond Mud
General Mineral/Inorganics 2007
9/9/07 and 10/23/07 Sampling

Sample Name Units	Boron ppm	Ca ppm	CFC ppm	Cl meq/L	EC us/cm	Excess Carbonates NA	Total Fixed Solids mg/L	Mg ppm	Moisture %	Nitrate Nitrogen ppm	Percolation NA	pH Units	Phosphorus ppm	Potassium ppm	SAR %	Sodium ppm	Soluble Salts ppm	Sulfate Sulfur ppm	TDS ppm	TKN ppm	Total Nitrogen ppm	TOC ppm
WP-5	-	-	4.3	-	2,500	-	-	-	43	<2.0	-	7.7	1	-	-	-	-	-	-	460	460	1,000
WP-9	-	-	4.2	-	1,200	-	-	-	41	<2.0	-	7.6	0.8	-	-	-	-	-	-	390	390	17,000
WP-11	-	-	3.3	-	530	-	-	-	33	<2.0	-	7.6	0.2	-	-	-	-	-	-	180	180	16,000
WP-12	-	-	2.4	-	320	-	-	-	38	<2.0	-	7.4	<0.2	-	-	-	-	-	-	60	60	18,000
WP-28	-	660	90	94	3,000	-	310,000	6500	39	1.1	-	8.2	88	440	0.7	290	-	-	4,100	1,700	1,700	23,000
WP-30	-	620	80	86	1,800	-	270,000	4100	29	0.6	-	7.9	84	540	0.7	210	-	-	3,300	1,600	1,600	21,000
WP-31	-	630	80	57	4,100	-	210,000	3200	34	<1.0	-	8	76	930	0.6	180	-	-	3,600	1,700	1,700	21,000
WP-32	-	590	60	88	7,000	-	110,000	2000	21	0.7	-	8.2	90	820	0.8	190	-	-	2,400	3,000	3,000	21,000
WP-43	-	650	60	88	6,900	-	130,000	2100	21	0.4	-	8.3	86	750	0.7	170	-	-	1,500	3,200	3,200	17,000
WP-47	-	610	70	47	5,900	-	140,000	2100	22	0.5	-	8.1	94	840	0.7	160	-	-	2,600	2,400	2,400	20,000
WP-48	-	580	60	63	6,200	-	380,000	2700	41	0.4	-	8.2	58	980	0.7	170	-	-	2,300	2,400	2,400	15,000
WP-53	-	520	50	95	4,600	-	220,000	3000	36	0.4	-	8.2	82	940	0.6	160	-	-	2,200	2,800	2,800	23,000
WP-59	-	1500	70	93	7,200	-	120,000	2200	20	0.7	-	8.1	78	760	0.6	150	-	-	1,700	2,500	2,500	21,000
WP-61	-	640	50	55	3,900	-	400,000	2400	39	0.5	-	8.1	106	830	0.7	160	-	-	1,300	1,600	1,600	17,000
WP-64	-	970	60	91	2,500	-	200,000	3100	31	0.7	-	7.4	46	450	0.9	250	-	-	6,000	1,300	1,300	32,000
WP-65	-	650	60	75	4,600	-	180,000	2700	27	0.5	-	7.9	114	810	0.7	170	-	-	2,400	2,000	2,000	23,000
WP-66	-	660	50	88	5,400	-	190,000	2100	22	0.5	-	8	82	730	0.8	180	-	-	1,900	1,200	1,200	19,000
WP-67	-	570	70	110	4,300	-	290,000	2700	34	0.3	-	8	114	930	0.7	190	-	-	1,700	1,800	1,800	22,000
WP-72	-	470	80	66	2,700	-	300,000	4000	40	1.6	-	8.1	122	380	0.6	190	-	-	2,000	2,600	2,600	27,000
Average	NA	688	53	80	3,929	NA	226,000	2,993	32	0.6	NA	7.9	73	742	0.7	188	NA	NA	2,600	1,731	1,731	19,684

Table 2 - Aerated Pond Mud
General Mineral/Inorganics 2009
7/14/09 Sampling

Sample Name Units	Boron ppm	Ca ppm	CEC	Cl meq/L	EC uS/cm	Excess Carbonates NA	Fixed Dissolved Solids ppm	Mg ppm	Moisture %	Nitrate Nitrogen ppm	Percolation NA	pH Units	Phosphorus ppm	Potassium ppm	SAR %	Sodium ppm	Soluble Salts ppm	Sulfate Sulfur ppm	TDS ppm	TKN ppm	Total Nitrogen ppm	TOC ppm
6-25 NE CORNER	0.15	1230	10.8	4.3	1,590	None	224	201	59.3	44	High	6.3	98	348	0.16	73	1,018	180	828	297	29,400	2,200
6-26 NW CORNER	0.35	950	12.5	9.1	2,920	None	191	286	62	116	High	6.3	122	661	0.59	381	1,869	160	1,510	616	71,700	2,800
6-28 SETTLING POND	0.44	1140	16.3	12.6	6,430	None	796	398	77	340	High	6.3	125	1,050	0.45	446	4,115	445	3,340	778	112,000	1,900
6-27 SE CORNER	0.25	890	10.8	9.8	4,290	None	412	261	56.3	220	High	6.8	118	722	0.56	318	2,746	185	2,300	627	61,500	2,300
6-27 SW CORNER	0.14	660	5.7	7.1	3,210	None	301	136	27.6	287	High	7.1	60	323	0.37	104	2,054	180	1,710	179	14,000	600
6-29 SE CENTRAL	0.25	760	13	7.6	2,340	None	379	355	22.5	94	High	5.6	118	481	0.31	165	1,498	125	1,250	224	18,800	1,200
6-29 S SIDE	0.49	530	6.1	5.9	3,500	None	277	181	35	87	High	6.6	62	365	0.47	10	2,240	110	1,810	218	21,600	1,100
6-29 WEST SIDE	0.13	640	6.9	6.9	1,980	None	174	208	31.2	102	High	7	84	554	0.42	129	1,267	118	1,020	207	20,000	2,100
6-30 EAST SIDE	0.17	1450	13.3	8.4	3,090	None	156	261	72.9	88	High	7.3	124	708	0.36	480	1,978	200	1,620	941	128,000	3,300
6-30 SOUTH SIDE	0.28	1190	13.4	7.6	2,980	None	196	297	68.4	101	None	6.7	119	729	0.47	451	1,907	90	1,540	711	82,700	2,700
WP 172-SLUDGE	0.29	1250	20	21.4	3,010	None	784	458	92.8	116	Moderate	6.9	470	1,480	2.3	1430	1,926	525	1,530	17,640	199,000	4,800
WP 172-SOLIDS	0.37	980	12.9	15.7	5,350	None	813	352	79.3	370	High	6.9	345	1,040	1.5	573	3,424	300	2,790	9,240	188,000	4,500
WP 175-SLUDGE	0.38	1400	23.8	20.7	6,040	None	904	539	93.4	401	High	6.7	460	1,570	1.8	1420	3,866	305	3,150	17,470	139,000	4,300
WP 175-SOLIDS	0.36	970	13.6	13.2	5,060	None	766	318	77.5	298	High	6.8	330	990	1.5	540	3,238	325	2,630	8,850	301,000	4,300
WP 176-SLUDGE	0.41	1420	25.7	27.1	7,490	None	1040	628	96.2	410	Low	7.1	515	2,280	2	1750	4,794	360	3,760	6,940	96,000	4,900
WP 176-SOLIDS	0.31	890	11.3	12.2	4,720	None	617	345	76.7	112	High	7	131	831	1.4	438	3,021	250	2,460	9,460	118,000	3,500
WP 178-SLUDGE	0.33	1010	12.7	11.9	4,890	None	702	279	72.9	152	High	6.8	128	832	1.3	479	3,130	370	2,540	7,950	117,000	3,700
WP 179-SLUDGE	0.31	1180	13.7	14.1	5,050	None	941	373	79.3	214	High	6.9	380	937	1	536	3,232	145	2,650	11,200	151,000	4,300
WP 180-SLUDGE	0.16	1220	13	12.2	3,660	None	610	297	43.1	76	High	7.3	111	1,050	0.8	413	2,342	275	1,880	5,712	95,000	4,200
WP 181-SLUDGE	0.38	870	11.8	12.9	4,860	None	490	336	74	88	High	6.9	128	1,020	1.6	481	3,110	170	2,550	9,464	104,000	3,600
WP 182-SLUDGE	0.32	1030	16.1	15.1	5,800	None	876	330	84.8	161	High	6.8	345	1,230	2.1	840	3,712	115	3,070	11,704	123,000	4,200
WP 183 Sludge	0.34	980	15.7	15.1	5,200	None	581	411	85.7	276	High	6.7	415	907	2	840	3,328	500	2,730	8,740	138,000	3,700
WP 183 Solids	0.23	850	8.3	9.6	3,530	None	326	189	62.3	155	High	7.2	118	567	1	240	2,259	225	1,810	5,090	72,000	2,600
WP 187	0.38	930	13.8	13.9	4,730	None	564	330	79.3	189	High	6.7	128	1,010	1.8	606	3,027	280	2,480	10,080	127,000	3,700
Average	0.30	1,017.5	13	12	4,238	NA	547	324	67	187	NA	6.8	210	903.5	1.09	548	2712.5	247	2,207	6,014	105,404	3,188

Table 3 - Total Metals
2007 and 2009
Units in mg/kg

Sample Name	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
9/9/07 and 10/23/07 Sampling																			
WP-5	<2.0	1.5	90	<1.0	<1.0	7.8	3.6	8.6	-	10	-	<0.1	1	19	<1.0	<1.0	<1.0	6.2	58
WP-9	<2.0	1.9	92	<1.0	<1.0	6.8	3.4	9.5	-	12	-	<0.1	1	20	<1.0	<1.0	<1.0	6.4	56
WP-11	<2.0	1.3	87	<1.0	<1.0	5.9	3.7	6.1	-	12	-	<0.1	1.2	18	<1.0	<1.0	<1.0	6.4	45
WP-12	<2.0	1.2	88	<1.0	<1.0	3.2	4.8	0	-	3.2	-	<0.1	<1.0	5.6	<1.0	<1.0	<1.0	7	17
WP-28	<2.0	2.1	77	<1.0	<1.0	27	4.1	43	12000	5.5	230	<0.1	1.2	25	<1.0	<1.0	<1.0	24	83
WP-30	<2.0	2	90	<1.0	<1.0	30	4.2	53	13000	5.6	180	<0.1	1	25	<1.0	<1.0	<1.0	24	76
WP-31	<2.0	2.3	89	<1.0	<1.0	29	3.9	49	11000	5.4	140	<0.1	<1.0	25	<1.0	<1.0	<1.0	24	75
WP-32	<2.0	1.5	63	<1.0	<1.0	21	2.7	37	7200	3.5	100	<0.1	1.1	16	<1.0	<1.0	<1.0	16	55
WP-43	<2.0	1.5	58	<1.0	<1.0	18	2.7	32	8000	3.3	130	<0.1	<1.0	15	<1.0	<1.0	<1.0	16	50
WP-47	<2.0	1.6	59	<1.0	<1.0	19	2.7	31	8200	3.7	130	0.3	1.1	17	<1.0	<1.0	<1.0	17	54
WP-48	<2.0	2	71	<1.0	<1.0	26	4	36	12000	4.2	220	<0.1	<1.0	22	<1.0	<1.0	<1.0	20	52
WP-53	<2.0	1.9	60	<1.0	<1.0	20	3	35	8700	4.9	130	<0.1	<1.0	22	<1.0	<1.0	<1.0	20	59
WP-59	<2.0	1.6	58	<1.0	<1.0	17	2.7	33	7200	4.2	110	<0.1	<1.0	17	<1.0	<1.0	<1.0	17	56
WP-61	<2.0	1.5	61	<1.0	<1.0	19	3.3	25	11000	4.7	130	<0.1	<1.0	18	<1.0	<1.0	<1.0	26	50
WP-64	<2.0	2.8	71	<1.0	<1.0	23	3.3	37	10000	9.9	140	<0.1	<1.0	29	<1.0	<1.0	<1.0	28	66
WP-65	<2.0	3	75	<1.0	<1.0	24	3.6	40	8900	10	160	<0.1	<1.0	31	<1.0	<1.0	<1.0	30	71
WP-66	<2.0	1.6	52	<1.0	<1.0	15	2.5	30	7700	4.3	120	<0.1	<1.0	19	<1.0	<1.0	<1.0	19	52
WP-67	<2.0	2.1	77	<1.0	<1.0	23	3.9	38	13000	8.8	210	<0.1	<1.0	24	<1.0	<1.0	<1.0	27	69
WP-72	<2.0	2.8	87	<1.0	<1.0	28	4.2	49	13000	9.2	190	<0.1	1	30	<1.0	<1.0	<1.0	31	92
7/14/09 Sampling																			
WP-172	<2.0	1.5	34	<1.0	<1.0	11	1.9	23	-	2.7	-	<0.1	<1.0	13	<1.0	<1.0	<1.0	13	42
WP-175	<2.0	1.9	48	<1.0	<1.0	14	2.3	28	-	1.7	-	<0.1	<1.0	11	<1.0	<1.0	<1.0	12	45
WP-176	<2.0	1.7	68	<1.0	<1.0	18	3	40	-	1.4	-	<0.1	<1.0	15	<1.0	<1.0	<1.0	17	51
WP-178	<2.0	1.6	52	<1.0	<1.0	18	2.5	30	-	2.5	-	<0.1	<1.0	14	<1.0	<1.0	<1.0	14	48
WP-179	<2.0	1.5	40	<1.0	<1.0	14	2.3	26	-	3	-	<0.1	<1.0	13	<1.0	<1.0	<1.0	14	45
WP-181	<2.0	1.7	39	<1.0	<1.0	12	2.1	24	-	2.3	-	<0.1	<1.0	11	<1.0	<1.0	<1.0	13	39
WP-182	<2.0	2.3	40	<1.0	<1.0	14	2	26	-	2.8	-	<0.1	<1.0	15	<1.0	<1.0	<1.0	15	43
WP 183 Sludge	<2.0	1	35	<1.0	<1.0	11	1.7	24	-	1.4	-	<0.1	<1.0	8.8	<1.0	<1.0	<1.0	8.4	39
WP 183 Solids	<2.0	2.6	50	<1.0	<1.0	17	2.7	31	-	6.1	-	0.3	<1.0	25	<1.0	<1.0	<1.0	27	47
WP 187	<2.0	1.2	48	<1.0	<1.0	15	2.1	32	-	1.7	-	<0.1	<1.0	12	<1.0	<1.0	<1.0	12	47
Average	NA	1.8	64	NA	NA	17	3.1	30	10,060	5.2	155	NA	1.1	18.5	NA	NA	NA	17.6	54.6
Title 14 Composit Maximum	NA	41	NA	NA	39	1,200	NA	1,500	NA	300	NA	17	NA	420	36	NA	NA	NA	2,800
Title 22 Special Waste TTLC Levels	500	500	10,000	75	100	2,500	8,000	2,500	NA	10,000	NA	20	3,500	2,000	100	500	700	2,400	5,000

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Table 4 - Aerated Pond Mud
DTFA Metals
9/9/07 and 10/23/07
Units in mg/kg

Sample Name	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
WP-5	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	290	2.3	<2.0	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	1	<5.0
WP-9	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	330	3.1	<2.0	<0.10	<1.0	1.6	<1.0	<1.0	<1.0	1.3	5.6
WP-11	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	220	3.2	<2.0	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<5.0
WP-12	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	48	<1.0	2.2	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
WP-28	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	190	3.9	<2.0	<0.10	<1.0	1.9	<1.0	<1.0	<1.0	1.3	13
WP-30	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	300	1.5	<2.0	<0.10	<1.0	1.4	<1.0	<1.0	<1.0	1.4	5.2
WP-31	<2.0	<1.0	8.4	<1.0	<1.0	<1.0	<1.0	6.4	220	1.5	<2.0	<0.10	<1.0	1.4	<1.0	18	<1.0	1.5	22
WP-32	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	47	180	1.3	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	1.7	18
WP-49	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	6.8	140	<1.0	<2.0	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	18
WP-47	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	5.2	140	1.1	<2.0	<0.10	<1.0	1.5	<1.0	<1.0	<1.0	1.3	22
WP-48	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	220	1.1	<2.0	<0.10	<1.0	1	<1.0	<1.0	<1.0	1.2	5.5
WP-59	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	260	1.5	<2.0	<0.10	<1.0	3.2	<1.0	<1.0	<1.0	1.6	11
WP-61	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	2.2	140	<1.0	<2.0	<0.10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	9.5
WP-64	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	120	1.1	<2.0	<0.10	<1.0	1	<1.0	<1.0	<1.0	1.4	7
WP-65	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	2.6	250	3.2	<2.0	<0.10	<1.0	6.1	<1.0	<1.0	<1.0	1.8	14
WP-66	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	3.3	240	2.7	<2.0	<0.10	<1.0	4.4	<1.0	<1.0	<1.0	2.1	14
WP-67	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	210	1.4	<2.0	<0.10	<1.0	2	<1.0	<1.0	<1.0	1.4	9.9
WP-72	<2.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	220	1.6	<2.0	<0.10	<1.0	1.7	<1.0	<1.0	<1.0	1.5	5.6
Average	NA	NA	8.4	NA	NA	NA	NA	4.5	219	2.1	2.2	NA	NA	2.6	NA	18	NA	1.5	12
Title 14 Compost Maximums	NA	41	NA	NA	39	1200	NA	1500	NA	300	NA	17	NA	420	36	NA	NA	NA	2800

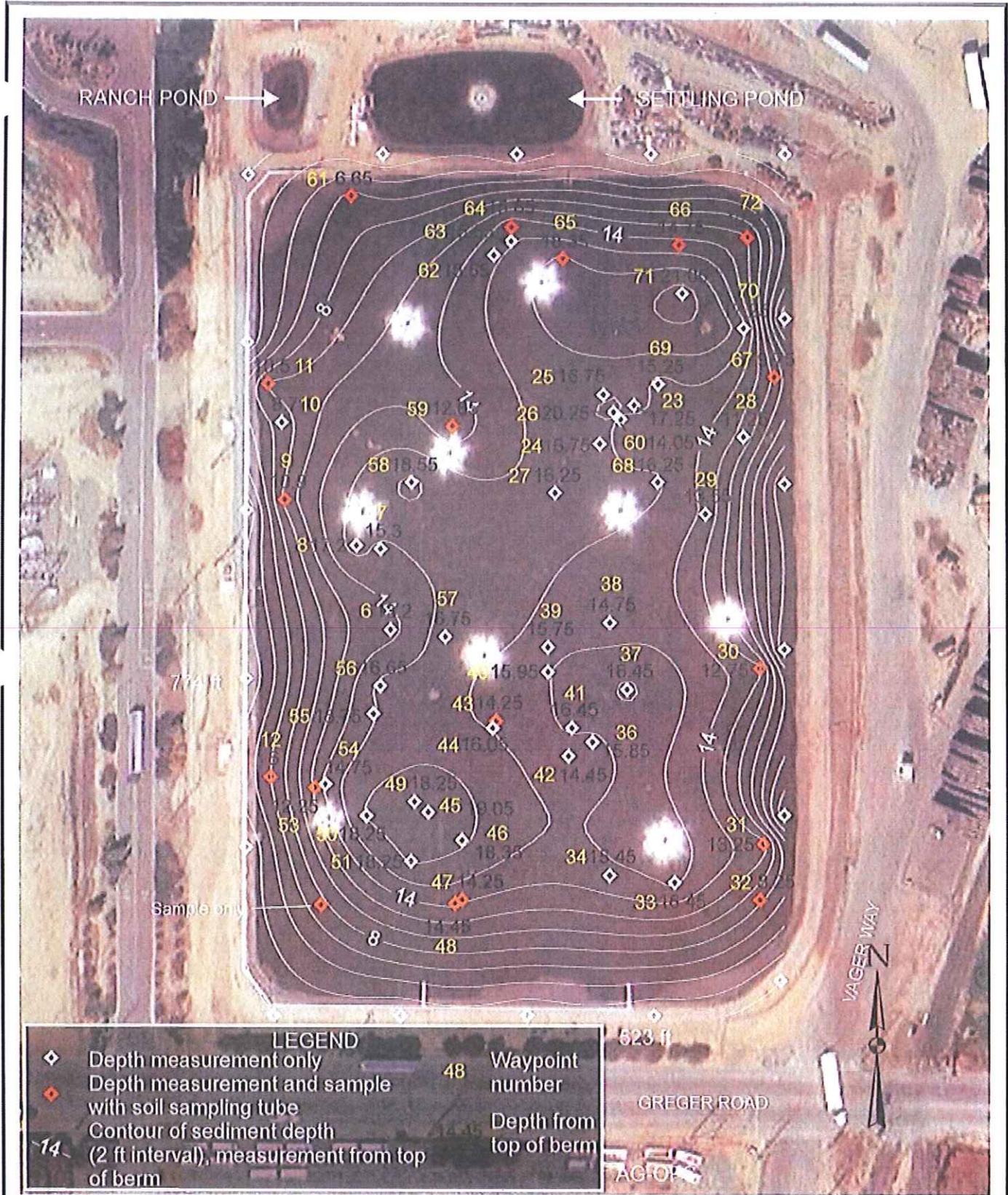
Table 5 - Aerated Pond Mud
DI Wet Test Metals
7/14/09
Units in mg/L

Sample Name	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Cs	Mg	K	Na
WP 175	<0.2	<0.1	1.7	<0.1	<0.1	<0.1	<0.1	<0.2	170	<0.1	5	<0.01	<0.1	0.1	<0.1	<0.1	<0.1	0.2	1.3	46	16	14	<5.0
WP 178	<0.2	<0.1	1.9	<0.1	<0.1	<0.1	<0.1	<0.2	210	<0.1	6	<0.01	<0.1	0.2	<0.1	<0.1	<0.1	0.2	1.5	45	21	19	<5.0
WP 179	<0.2	<0.1	2	<0.1	<0.1	<0.1	<0.1	<0.2	140	<0.1	3.5	<0.01	<0.1	0.2	<0.1	<0.1	0.3	0.3	1.6	75	22	13	<5.0
WP 183 Solids	<0.2	<0.1	2.1	<0.1	<0.1	<0.1	<0.1	<0.2	160	<0.1	4.3	<0.01	<0.1	0.4	<0.1	<0.1	0.4	0.4	1.8	65	22	13	<5.0
Average	NA	NA	1.9	NA	NA	NA	NA	4.5	170	2.1	4.7	NA	NA	0.2	NA	18.0	NA	0.3	1.6	58	21	14	NA
Title 22 STLC Disposal Criteria	15	5	100	0.75	1	5	80	25	NA	5	NA	0.2	350	20	1	5	7	24	50	NA	NA	NA	NA

Table 6 - Rinse Mud Results from 2004 and 2009

Sample Analysis	Units	7/21/04	8/5/04	8/11/04	9/2/04	9/2/04	9/16/04	9/24/04	10/4/04	10/4/04	10/6/04	8/6/09	Average Nutrients Lbs/Ton of Rinse Mud Application
Date													
pH		-	6.2	6.5	6.8	5.5	5.3	5.5	5.7	5.4	5.4	6.8	-
Soluble Salts													
ds/m		-	4.1	1.6	5.3	1.8	2.1	2.4	2.5	2.3	1.91	-	
Cl	%	-	0.31	0.14	0.29	0.1	0.01	0.06	0.32	0.02	-	-	
Nitrogen	Pounds Nutrients /Wet Ton	4.39	2.87	1.1	4.16	4.09	12.41	10.08	3.82	2.93	0.28	4.613	
Boron	Pounds Nutrients /Wet Ton	0.0458	<0.01	0.005	0.04	0.026	0.06	0.073	0.0225	0.062	<0.01	0.0417	
Zn	Pounds Nutrients /Wet Ton	0.091	0.0208	0.005	0.08	0.026	0.06	0.049	<0.0225	0.0312	0.0192	0.0425	
PO4	ppm	-	-	-	-	-	-	-	-	-	125	-	
K	ppm	-	-	-	-	-	-	-	-	-	2580	-	
Ca	ppm	-	-	-	-	-	-	-	-	-	2170	-	
Mg	ppm	-	-	-	-	-	-	-	-	-	719	-	
Na	ppm	-	-	-	-	-	-	-	-	-	229	-	
Mn	ppm	-	-	-	-	-	-	-	-	-	54	-	
Sulfate	ppm	-	-	-	-	-	-	-	-	-	430	-	
Fe	ppm	-	-	-	-	-	-	-	-	-	70	-	
CEC	meq/100gm	-	-	-	-	-	-	-	-	-	26.8	-	
Sb	ppm	-	-	-	-	-	-	-	-	-	<2.0	-	
As	ppm	2.6	2.5	-	1.2	ND	1.5	-	1.5	<1.0	-	-	
Ba	ppm	-	-	-	-	-	-	-	-	-	24	-	
Be	ppm	-	-	-	-	-	-	-	-	-	<1.0	-	
Cd	ppm	-	-	-	-	-	-	-	-	-	<1.0	-	
Cr	ppm	14.3	12.9	-	27.3	36.2	12	-	15.9	7.0	-	-	
Co	ppm	-	-	-	-	-	-	-	-	-	<1.0	-	
Cu	ppm	-	-	-	-	-	-	-	-	-	3.6	-	
Pb	ppm	-	-	-	-	-	-	-	-	-	<1.0	-	
Hg	ppm	-	-	-	-	-	-	-	-	-	<0.1	-	
Mo	ppm	-	-	-	-	-	-	-	-	-	<1.0	-	
Ni	ppm	-	-	-	-	-	-	-	-	-	7.8	-	
Se	ppm	-	-	-	-	-	-	-	-	-	<1.0	-	
Ag	ppm	-	-	-	-	-	-	-	-	-	<1.0	-	
Tl	ppm	-	-	-	-	-	-	-	-	-	<1.0	-	
V	ppm	-	-	-	-	-	-	-	-	-	6.2	-	
Zn	ppm	-	-	-	-	-	-	-	-	-	9.6	-	

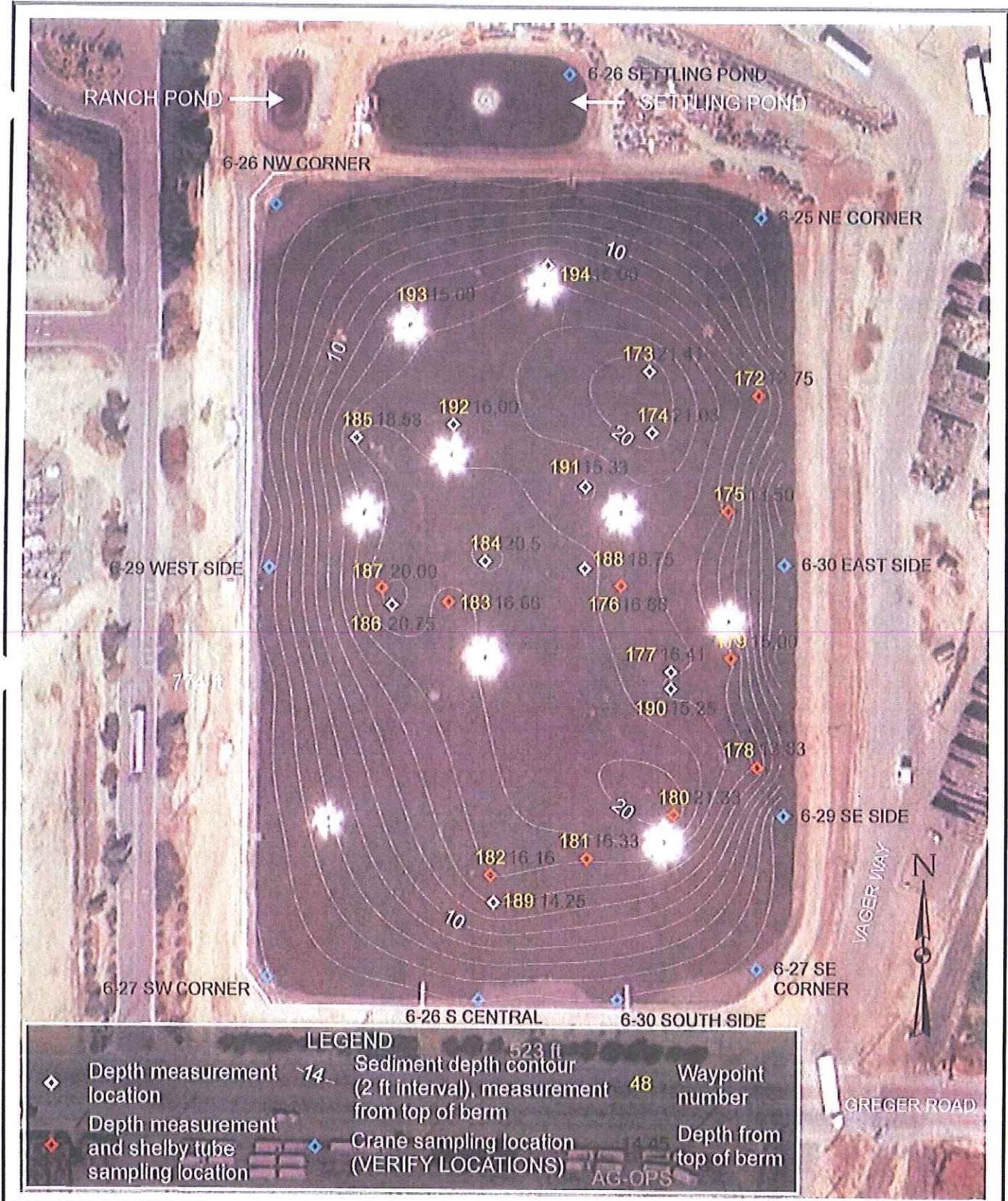
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Dunn
ENVIRONMENTAL, INC.

DATE: 07/20/2009
 SCALE: 1"=120'
 PROJECT NO: 102-15
 DRAWN: MM
 CHECKED: PFD
 FIGURE: 2

2007 AERATED POND SAMPLING AND
 MUD DEPTH MEASUREMENT CONTOURS
 CONAGRA FOODS, INC
 STANISLAUS COUNTY, CALIFORNIA



DATE:07/20/2009
 SCALE: 1":120'
 PROJECT NO: 102-19
 DRAWN: MM
 CHECKED: PFD
 FIGURE: 3

2009 AERATED POND SAMPLING AND MUD DEPTH MEASUREMENT CONTOURS
 CONAGRA FOODS, INC
 STANISLAUS COUNTY, CALIFORNIA

3. SOIL SAMPLING PROTOCOL

3.1 ADDITIONAL BACKGROUND SAMPLING OF AERATED POND MUD

When the water level is pumped down in the pond, mud will be collected and analyzed on an as needed or land application timing basis for the list of parameters outlined on Table 8 in Section 5. Both the extractable and total concentration methodologies will be used to assess the plant uptake capabilities and total concentrations of the mud application. Comparisons will be made to the total concentrations and agronomic needs for the nutrient parameters. In addition, the CAM 17 metals will be analyzed. Pre-excavation sampling may be completed which will include hand auger sampling at a frequency and depth to assess the material to be excavated and applied, respective of the 100 tons of material. For the pond mud, we propose collecting one sample per 100 tons of material or up to three times per week at full dredging operation, if necessary based on pre-construction sampling. The collection point within the discharge pumps will vary; however, the sample points will be random selected and the sample collected will be representative of the hauled volume. For the rinse mud, samples will be collected every ten truck loads, using the procedures described above. A limited list of parameters will be used for the rinse mud analytical testing.

Field sampling of the mud will consist of the following protocol: 1) a trigger-release dip cup will be used to remove an estimated one liter volume of the mud from the pond discharge to a dump truck or spreader, 2) a clean, laboratory provided liter jar or plastic baggie will be used to retain the sample for immediately delivery to the lab, 3) immediate analytical results will be requested, 4) the field program will be documented on field data sheets and chain of custody documentation and 5) samples will be transferred and stored on ice. A California certified laboratory will be used and results will be assessed by a specialist prior to application.

The parameters pH and EC will be collected hourly at a minimum or as appropriate to assess the pH and EC of the mud and discharge fluid. No new handling or drying areas are proposed beyond the limited interim storage within the corners of the existing aerated pond. This will primarily be a direct haul operation.

3.2 ADDITIONAL BACKGROUND SAMPLING TOMATO RINSE WATER AND MUD

During the first two weeks of tomato season and on a frequency of every 10 trucks, rinse water and mud will be collected and analyzed on a rush basis for the list of parameters outlined on Table 8 in Section 5. Both the extractable and total concentration methodologies will be used to assess the plant uptake capabilities and total concentrations of the rinse mud application. Comparisons will be made to the total concentrations and agronomic needs for the nutrient parameters. We propose collecting four samples in the first two weeks prior to discharge. The collection point within the flume will vary; however, the lowest point of the flume will be sampled and the sample will be collected of the representative hauled volume.

Field sampling of the mud will consist of the same protocol shown above. The parameters pH and EC will be collected daily to assess the pH and EC of the rinse mud and flume water. Fresh water or tomato serum enhancements or treatment may be necessary to stabilize pH and reduce the potential of metal mobilization. Preferred values of pH will range from 6 to 8 standard units. Rinse mud by products can be discharged at pH levels from 3.5 to 12.0.

4. Land Application Areas and Best Management Practices

4.1 Areas and Initial Soil Chemical Results

For the initial field assessments, JND Thomas Co., Inc will use over 2,219 acres of primarily non irrigated crop land. Variations to the schedule of land application use may be considered between years depending on available fields, application periods and annual sampling results. These variations will be documented and reported each year. The details for each parcel including Soils, Set-backs, On-site well locations, Houses, Canals and Field Drainage Directions are all provided in the parcel detail maps.

Proposed Long Term JND Thomas Co., Inc Application Area Summary

Application Years	Risk to Water	Parcel #	Acres	Usable Acres	Crop	Soil	Use	Drainage	Wells	Owner
2010/11	Low	1(a)	749	552	Oat/Alm	Sandy Loam	Rural AG	Rapid SW	N edge	VA Rodden
2010/11	Low	1(b)	116	250	Oats	Sandy Loam	Rural AG	Rapid South	None	VA Rodden
2010/11	Low	3(a)	79	68	Oats	Pentz-Peters	Rural AG	Rapid South	None	Lloyd Prothers
2010/11	Low	3(b)	304	258	Oats	Pentz-Peters	Rural AG	Rapid South	None	Lloyd Prothers
2010/11	Low	3(c)	439	373	Oats	Pentz-Peters	Rural AG	Rapid South	None	Lloyd Prothers

4.2 BEST MANAGEMENT PRACTICES

Best Management Practices (BMPs) refer to a set of operation methods employed to limit potential impacts to water quality. Activities related to mud as a soil amendment are directly related to the transportation, temporary storage (if necessary), application and incorporation of the referenced material. Brichetto Ranches will be retained to manage, control and keep records associated with the application of the soil amendment stated herein.

Transportation of Aerated Pond Mud and Rinse Mud

The mud will be transported in covered water-tight top truck tank containers (side or rear dump) or water-tight roll-off bins. As referenced in Section 4, the target pH values prior to transport will range between 6 and 8 standard pH units preferred. Rinse mud is allowed at lower pH levels, ranging from 3.5 to 12 standard pH units.. BMPs will include keeping the capacity of the containers to less than 60% to avoid spillage during transfer. The bottom and side floors will be water tight. Baffles will be placed within the containers to reduce the movement of the load. Between loads water rinsing may be necessary to reduce odors. As referenced, fresh water or treatment may be needed for pH adjustment.

Application of Aerated Pond Mud

Application shall be completed throughout the year weather and operation permitting. Primarily one application shall occur during the early to late spring and one should occur after crop harvest. Based on the available fields for application, we anticipate numerous application during a growing season based on agronomic rates.

On site temporary holding storage bins for direct application may be used. Stockpiles on plastic or within existing on site ponds may be generated for drying. Wastewater will drain to the treatment ponds. Steel open-topped, holding tanks may be used to hold mud prior to using a vacuum tank or manure spreader for application. Holding periods on the land application properties will be less than 72 hours. For the application of mud on land where oats will be grown, the direct transfer from the transport truck will typically occur. Oat, almond and walnuts fields may be disked prior to application. Application will include the spreading of mud at an average depth of less than two inches per application. To prevent over-saturation, different areas or discharge track will be

used for each pass. The areas that have received rinse mud will be disked to a minimum of six inches in depth to incorporate mud into soil within 72 hours of application to prevent nuisance conditions in accordance with waiver provisions. The area will be redisked if odors are observed. Note other mitigation measures below.

One hundred foot setback distances from low lying drainage areas will be maintained during application. Inspection forms will be used to document the observations, type and amounts. Additional setbacks are shown on the figures.

The following potential nuisance conditions will be addressed in the following manner:

Excessive Liquid and Moisture:

Excessive liquid and moisture accumulation will be addressed by the assessment of water content prior to shipping and field preparation efforts. A drying area will be used on the ConAgra facility prior to hauling, if available or necessary. The grading of the site will be completed so that maximum adsorption will occur. Staging area and field preparation may consist of the application of dry manure or compost in a thin lift to maximize adsorption. Agronomic rates will be closely observed for these applications. Dry product will be added to reduce the percolation of the wet material.

Excessive Noise:

Utilized equipment will be in good working condition to minimize excessive noise. In addition, the rural setting of the proposed application areas will reduce the number of noise receptors.

Excessive Dust:

In order to reduce potential dust emissions from roadway and site use, a water truck with spray nozzles will be used as warranted. Road gravel, composed of 2-inch or greater size gravels, will be used. Speed reduction signs will be used as necessary. Tarp covers may be necessary during high winds.

Excessive Objectionable Odor:

Haulers will cover loads from the ConAgra Facility to the application area. To reduce objectionable odors at the application fields, spreading and disking will be the primary mitigation measure. Earlier application or re-disking will be completed as needed. If odors persist, different staging and application area locations will be selected.

Excessive Fly, Mosquito and/or Vector Nuisance:

Similar mitigation measures used for odors will be used to reduce flies, mosquito and vector concerns. Incorporation with spreading and disking within 48 to 72 hours will reduce the potential of nuisances and odors discussed above. If nuisances persist, changed locations will be strongly considered and moisture content will be modified with mixing.

Severe and Inclement Weather:

If rain is forecasted, application of by-product will not take place. Storage areas that drain to the ConAgra Wastewater Treatment Facility will be used for staging purposes. Stored piles will be placed on plastic and covered with plastic as necessary. A general goal of seven days of drying (insignificant rain events resulting in no saturation) will be used prior to by-product placement on fields.

Loading Rates based on Aerated Pond Mud Results

The nitrogen loading, inorganic and organic loading rates are significantly below the required nutrient levels for oats, almonds and walnuts. The rinse mud detected metal constituents are within the range of the soil results as described above. In addition, the hydraulic loading and subsequent nutrient loading is extremely low and protective of ground water. The Western Fertilizer Handbook and recommendations from the project certified agronomist, Terry Prichard, were used for the following plant uptake or agronomic values for the following crops:

Recommended Total Nitrogen Application Rates:

Oats: 160 lbs/acre/yr

Young Almonds and Walnuts: 130 lbs/acre/yr

Total nitrogen as N uptake for oats is 160 lbs/acre/year, and young almond and walnuts are 130 lbs/acre/yr. Total Nitrogen as N results for the aerated pond mud range from 0.12 lbs/ton to 6.4 lbs/ton with an average of 3.46 lbs/ton. For an application rate of 130 lbs/acre/year, the average Total Nitrogen as N concentration of 3.46 lbs/ton would allow 37.5 dry tons/acre/year of waste and 55.34 wet tons/acre/year of waste, given an average moisture of 32.2% by weight. Due to a lower relative loading rate for almonds/walnuts, total nitrogen as N limits the total application volume per year. For 80 acres of almond/walnut fields, approximately 4,400 tons or 480 loads (9 ton loads) could be applied per year without exceeding 130 lbs/acre/year of total nitrogen as N. This translates to approximately less than 4 inches of application per acre. Refer to Table 7 for a comparison of the suggested application rates to the observed concentrations in the aerated pond mud.

Available potassium uptake for oats, young almonds, and young walnuts is 60 lbs/acre/yr. Available potassium ranges from 0.76 to 1.96 dry lbs/ton with an average of 1.48 lbs/ton. Approximately 59.8 wet tons/acre/year of waste could be applied. Due to the higher total nitrogen as N uptake for Oats, potassium provides the limiting volume for application per year instead. Approximately 2,360 tons, or 260 loads (9 ton loads) could be applied per year without exceeding the 60 lbs/acre/yr limit for potassium. This translates to approximately less than 3 inches of application per acre. Refer to Table 7 for a comparison of the suggested application rates to the observed concentrations in the aerated pond mud.

Available phosphorus uptake for oats, young almonds, and young walnuts is 60 lbs/acre/yr. Available phosphorus ranges from non-detect to 0.24 dry lbs/ton with an average of 0.14 lbs/ton. Approximately 636 wet tons/acre/year of waste could be applied.

For the parameters copper, nickel, boron and zinc, the application rates would be less than 1 lb/acre/year or approximately 1 ppm to 6-inch depth of incorporation. The application rate of arsenic and chromium would be similar.

Total nitrogen and potassium are the limiting factors as it provides the lowest waste loading rate of the analyzed parameters. Land applying the waste at rates greater than 59.3 wet tons/acre/year of wet waste would exceed the plant uptake and potentially impact groundwater. For the proposed 2008 application acres of 120 acres, the application rate would be approximately 130 lbs/acre/year based on nitrogen loading rates to trees. This is a very conservative nitrogen

application rate since only ammonia nitrogen and nitrate nitrogen are available for plant uptake. Ammonia and nitrate nitrogen were analyzed at three orders of magnitude lower in concentration than total nitrogen, refer to Appendix A. For the 2008 season, the 120 acre parcels oats and almonds respectively would be needed for application.

Application of Rinse Mud

Application of rinse mud will follow the rates outlined above and on Table 7. Specific information is as follows for historic data provided in Section 2.2 Rinse Mud Characteristics and until the rinse mud samples are collected in 2009. Rinse mud results indicate an application rate would be 130 lbs/acre/year for forage crops is achievable. This is a very conservative nitrogen application rate since only ammonia nitrogen and nitrate nitrogen are available for plant uptake. Ammonia and nitrate nitrogen were analyzed at three orders of magnitude lower in concentration than total nitrogen. For the parameters boron and zinc, the application rates for nitrogen would accumulate less than 1 lb/acre/year or approximately 1 ppm to 6-inch depth incorporation after disking. The application rate of arsenic and chromium would be similar.

Pre and Post Application Soil Sampling and Mud Sampling

Section 5 provides the soil sampling details. Section 3 provides details of the mud sampling.

Application Log and Record Keeping

A written log will be maintained documenting the number of loads and quantity of mud applied to each site. Documentation should include the daily pH of the rinse mud, application method used (vacuum truck or dump truck), inches applied and disking practice. The pH readings will be recorded at the plant prior to leaving the facility. The application areas will be detailed on a map. Refer to Appendix C for the daily application log form.

Table 7
Application Summary
Trees limited by N, Oats limited by K
ConAgra, Oakdale

	Total N	Available Phosphorus	Available Potassium	DTPA Copper	DTPA Nickel
Walnuts/Almonds - Maximum lbs/ac/yr	130 lbs/ac/year	60 lbs/ac/yr	60 lbs/ac/yr	1 lb/ac/yr	1 lb/ac/yr
Tons of Wet Waste Allowable/ac/yr*	55.3	636	59.6	449	407
Tonnage/Loads for 80 acres of Walnuts/Almonds	Approximately 4,400 tons, 480 loads (9 ton loads)				
Oats - Maximum lbs/ac/yr	160 lbs/ac/year	60 lbs/ac/yr	60 lbs/ac/yr	1 lb/ac/yr	1 lb/ac/yr
Tons of Wet Waste Allowable/ac/yr*	68.1	636	59.6	449	407
Tonnage/Load for 40 acres of Oats			Approximately 2,360 tons, 260 loads (9 ton loads)		

Based on an average moisture of 32.2%

Each year after the harvest season ends and post application sampling is completed, a summary report will be compiled and forwarded to ConAgra and the County. The report will contain specifics on the annual application under this program, refer to Section 6. The selection of specific areas to be applied during the next growing season will be detailed in that report.

5. APPLICATION AREA BACKGROUND AND SOIL SAMPLING PROTOCOL (PREAPPLICATION AND POST APPLICATION PROTOCOL)

DE understands that the following physical conditions exist that support the application of this soil amendment onto the ground. The sampling protocol will commence pre and post application. The post application will take place after the oat or tree crop is harvested.

5.1 CROP NUTRIENT UPTAKE SUMMARY

The success of a plant to uptake nutrients relates to water quality in that whatever nutrients are not taken up by the plant become available to ground water or surface water resulting in potential impacts. Plant uptake of nutrients relates to the following variables:

1. Plant Type – Different plants have different abilities to uptake nutrients related to rooted depths. For the referenced property Application Area 1, 2008 growing season winter oats will be used. Refer to Figure 3a; this property is located south of the ConAgra plant. For the Area 2 - 26 mile road property (refer to Figure 3b), the crop is non-producing young almonds. The rooted depth maximum for winter oats is one foot with 80 percent of the root mass occurring within the first foot of depth. Two year old almonds have a rooted depth of approximately four feet.
2. Application Rates –The nitrogen loading described herein is well below the recommended agronomic rates of 160 and 130 lbs/acre/yr, respectively. Post application soil sampling activities will focus on areas that may receive the highest application. Future years the crop and rate of application will be closely evaluated.
3. Soil Type – Soil type variation is significant across each ranch and is considered the most important factor in assessing nutrient migration through the subsurface, plant rooted depth and potential impact to ground water. Soil type is the most significant factor in determining the sample location rationale. We anticipate the highest residual concentrations to be present in the clay rich soils.
4. Topography and Proximity to Surface Water Areas – Low lying topography and proximity to the ditches is the second most important factor related to sample location across the application area.

In summary, pre and post application soil samples representing worst case residual nutrient levels are clay rich soils located in low lying topographic areas. Details will be provided after each sampling event. At a minimum samples will be collected every ten acres. Composite samples may be collected to a depth of four feet depending on plant rooted depth and soils encountered.

5.2 PHYSIOGRAPHIC SETTING

The ConAgra Facility is located in southeast Oakdale, California. The topography in the reference application areas is generally flat along the southern areas with rolling hills dominating the application areas to the North.

Regional Geology

The plant and application areas are located along the eastern margin of the San Joaquin River Basin. The geology is comprised of alluvial deposits of the ancestral Stanislaus River underlain by bedrock. The unconsolidated deposits comprise an estimated thickness from 50 to 1000 feet along this eastern margin Modesto Area. The regionally continuous clay member between the upper alluvial deposits has been encountered significantly in areas throughout the County and near the site. This clay member overlies the Mehrten Formation at depth. Typically at great depths are the bedrock formations believed to consist of the Ione, Valley Springs and Mehrten Formations.

Area Soils and Geology

The Soil Survey, Oakdale Area, California indicates that the soils underlying the proposed 2008 application area are comprised of the Montpelier-Whitney, San Joaquin-Madera, Snelling, Hanford-Tujunga and Hopeton-Peters soil associations. The Montpelier-Tujunga and San Joaquin-Madera association is affiliated with hardpan soils on moderately old fans and terraces. The Snelling association is affiliated with deep moderately well drained, moderately permeable soils on moderately old fans and terraces. The Hanford-Tujunga association is affiliated with deep well drained soils of alluvial fans from the Stanislaus River. Hopeton-Peters association is affiliated with shallow to moderately deep, medium textured soils on lacustrine or mixed sediments. Hardpan material is anticipated 4 to 5 feet below the surface. Four primary soil types can be found across the South and North Area Ranches. The soil types are clay, clay loam, loam and sandy loam. As indicated above, soil types are

significant when assessing nutrient migration and the retention of potential contaminants.

The geology consists of the interbedded alluvial sands and clays of the ancestral Stanislaus River. Significant sand units have been found at surface at the plant site, and 40 feet to 60 feet below ground surface (bgs) at locations on the Brichetto Ranch.

Regional Hydrogeology

The ConAgra Facility and the Land Application Area is located within the northwestern half of the Modesto sub basin of the San Joaquin River Basin as per Department of Water Resources (DWR) Bulletin 118. The Modesto sub basin lies between the Stanislaus River to the North and the Tuolumne River to the South. The 26 Mile Rd application area for 2008 and the future Gilbert Rd application area is located in the Eastern San Joaquin sub basin. Regional ground water flow is typically found within primary and secondary porosities within sandy alluvial deposits in the area. This primary ground water flow occurs within the sands of the Forebay Deposits, Riverbank and Modesto Formations at depth. Ground water is encountered in unconfined, semi-confined and confined conditions. The Mehrten Formation, comprised of permeable sands and gravels interbedded with clays lies at depths greater than 140 feet. Ground water flow is to the southwest toward the San Joaquin River Valley. Water levels have declined historically in the area.

Regional ground water is considered a calcium-sodium bicarbonate water type with TDS values ranging from 60 to over 8,000 ppm. In the basin elevated levels of chloride, boron, nitrate, iron and manganese are known to exist.

Specific Hydrogeology

Based on information from the 17 monitoring wells on the ConAgra Plant and the land application monitoring wells, ground water is encountered at depths of approximately 70 feet below ground surface. Monitoring wells are screened within permeable sands and gravel. Typically ground water flows to the south and southwest in the area depending on the proximity to streams and creeks.

For this application project the mud application on Kaufman Road, can be evaluated through existing ground water monitoring wells. The monitoring wells MW-1 and MW-6 on the agricultural operations area at the ConAgra Plant

are upgradient of the referenced parcel 63-28-26 and 63-28-11. The monitoring well LAMW-9 is directly downgradient.

No monitoring wells are in proximity to the other referenced mud application areas. Ground water depth varies on the order of 20 feet.

5.3 SOIL SAMPLING RATIONALE AND APPROACH

The referenced fields used for land application have been selected based on the distance from surface water features, soil and plant type. Figures 1 and 3a through 3f depict areas of application. Table 4 and the figures also depict the application area and soil types. The soil sample location rationale is as follows:

1. Soil Types - The soil types are specific to each referenced area. Specific site sampling will be used to refine the generalized soil type.
2. Topographic Location – As indicated above, application will take place where possible on the highest topographic areas. The low lying defined-ditch discharge areas will be avoided and setback will be used as a best management practice.
3. Sample Depth – Composite soils at a minimum will be collected from 0-1 feet, 1-2 feet below surface grade. Additional depth discrete sampling will be done based on soil and plant rooted depth. Soil descriptions will be used to identify the vertical profile within the soil type groups. Each soil type then will have potentially several depth discrete samples are to be analyzed. Plant rooted depth and the anticipated hardpan layer may limit the soil depth.
4. Number of Soil Samples - Three composite samples per field (one pound of soil per sample) of soil samples to be analyzed at the end of the growing season; depth discrete composite samples. Individual samples (number to be determined) may be collected below the root zone depth and two other samples to be analyzed pending field observations per field. A depiction of the soil types and field locations are provided on the Figures and Table 5. The sample locations will be explored to maximum depth of two feet depending on the location of hard pan soils or refusal conditions. Soils will be investigated using hand auger tools. The list of analytical parameters for testing are shown on Table 8.
5. Plant Tissue Samples - Ten to Twenty plant tissue samples will be collected from each field making one composite for laboratory analysis.

Plant tissue composites will be analyzed for moisture, TKN, total nitrogen, sodium, chloride, potassium, calcium, magnesium and phosphorus.

The soil type, color and physical character of the soil will be logged by a geologist or soil scientist under the direction of a California registered geologist or engineer. Soil staining will be closely observed. Soil samples will be collected for individual archive samples and depth discrete composite samples. As referenced, the sample depth will extend to the plant rooting depth as necessary. Hard pan conditions can be found from two to five feet. The soil composite methodology and analytical procedures will follow the required MRP monitoring program for soils. Details are provided throughout this plan and on Table 7; however, if soil sampling requires a change, the number of samples shown as clay or clay loam or sandy loam may change.

Equipment Decontamination Procedures

The hand auger and stainless-steel sampling equipment will be cleaned using a three step process including a prewash tap water rinse, an Alconox (non-phosphate soap) and distilled water rinse. Cleaning will take place between each selected sampling locations.

Soil Sampling and Composite Protocol

During excavation, a geologist or engineer will portion the sample for logging and chemical tests. Soil samples for logging will be separated for visual observation and geologic logging. The unified soil classification system (USCS) will be used to describe soils. Color charts will be used to identify color changes in respective soil type. Soil staining will be described thoroughly.

As referenced, soil samples for chemical analysis will be typically collected for depth discrete composite samples from the upper several feet related to application rate, soil type and plant rooted depth. A cleaned stainless-steel sampling device will be used to collect and place soil samples in a stainless-steel sampling bowl for mixing of the soil type. At each sample location and per depth, 2 ounces (oz.) of soil volume will be placed in depth discrete stainless-steel bowls for mixing of each composite sample for each soil type.

A thoroughly mixed soil sample from the depth composite will be placed in the referenced sample bottles as indicated by the laboratory. The proposed analytical parameters soil types and depth discrete samples to be analyzed in the lab are depicted on Table 8. The required sample size for analytical laboratory analysis of the analytes listed is approximately 32 oz of soil. If obvious signs of

high nutrient discoloration are observed soil samples will be selected for laboratory analysis. Samples selected for laboratory analysis will be placed into sample containers in the field.

Laboratory Analysis - It is anticipated that the following parameters will be analyzed, refer to Table 8: Cation Exchange Capacity, Moisture Content, Total Organic Carbon, Carbonate, pH, Soluble Salts-EC, TDS, Chloride, Calcium, Magnesium, Sodium, Sodium Adsorption Ratio (SAR) Kjeldahl Nitrogen, Nitrate, Total Nitrogen, Ammonium Nitrogen Available Phosphorus, Extractable Potassium and DTPA Zinc, Manganese, Iron; and additional CAM metals for Aerated Pond Muds only. Holding times will be observed closely for these analyses.

Table 8
By-Product and Soil Analytical Parameters
ConAgra, Oakdale

Sample Number	
Soil Classification	
Soil Texture	
Soil Color	
Cation Exchange Capacity	
Exchange Sodium Percent	
Moisture Content	
Total Organic Carbon	
Total Nitrogen and Nitrate	
Carbonate	
Saturation Paste Extract	pH and Buffer pH
	Soluble Salts – EC
	TDS and FDS
	Chloride
	Calcium
	Magnesium
	Sodium
	Sodium Absorption Ratio (SAR)
Sediment Nutrients	Kjeldahl Nitrogen
	Ammonium Nitrogen
	Available Phosphorus
	Extractable Potassium
Sediment MicroNutrients – Totals and DTPA Extractable Method. The Additional CAM 17 Metals for Aerated Muds Only	Boron, Zinc
	Manganese
	Iron, Chromium, Copper, Arsenic, etc.

6. REPORTING

As referenced in Section 4, the outline of this work plan document will be used to report completed elements of this rinse mud application and sampling effort. The findings will be included in a separate monitoring report submitted monthly, as necessary, the first year of operation and annually thereafter. The field form in Appendix C and others forms deemed necessary will be used to assist in tracking the field and reporting elements. Annual reports will be submitted to the County. Each annual report will summarize the application for the previous year and provide updates for the rates of application and sampling protocol established herein.

As referenced, this document will also be used to identify application areas to be utilized for each of the annual growing seasons. Table 5 provides an outline of the proposed scheduled use of the proposed land application sites. Table 7 provides the application rates.

FOOD PROCESSING RESIDUE USE SURVEY

YEAR _____

Business Name : _____

Business Address : _____

City _____ **State** _____ **Zip Code** _____

Mailing Address : _____

City _____ **State** _____ **Zip Code** _____

Person Completing Form : _____

Phone No. : _____

TYPE OF RESIDUE ¹	HAULER(S)	USE SITE & LOCATION	WEIGHT OF RESIDUE ² (in tons)

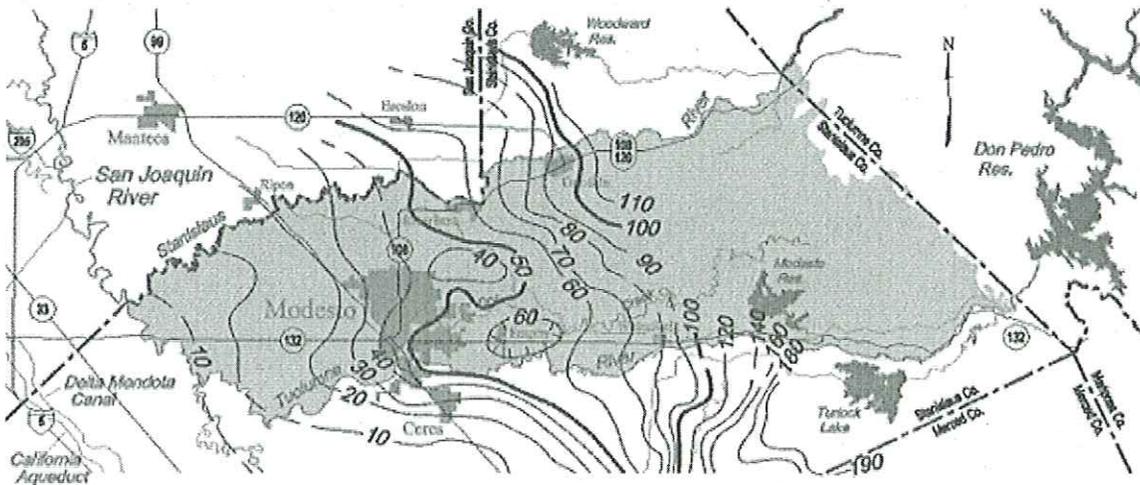
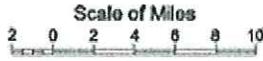
¹PLEASE itemize each type of residue.

²PLEASE express the weight of the residue in tons.

**Return the completed survey form to:
DEPARTMENT OF ENVIRONMENTAL RESOURCES
3800 Cornucopia Way, Suite C
Modesto, California 95358-9494**

Modesto Groundwater Basin

Spring 2000, Lines of Equal Depth to
Water in Wells, Unconfined Aquifer



Contours are dashed where inferred. Contour interval is 10 and 20 feet.

(48)