

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION  
895 Aerovista Place, Suite 101  
San Luis Obispo, California 93401-7906**

**WASTE DISCHARGE REQUIREMENTS**

**ORDER NO. R3-2007-0069**  
Waste Discharger Identification No. 3 420110001

**FOR THE  
THE CITY OF SOLVANG  
WASTEWATER FACILITIES  
SANTA BARBARA COUNTY**

The California Regional Water Quality Control Board, Central Coast Region (hereafter Central Coast Water Board), finds that:

**SITE OWNER AND LOCATION**

1. The City of Solvang (also referred to as the "Discharger") owns and operates a municipal wastewater collection, treatment, and disposal system, located adjacent to the Santa Ynez River, southwest of the City. The Santa Ynez Community Services District (CSD) retains ownership and direct responsibility for wastewater collection and transport systems up to the Fjord pumping station, which is owned and operated by the Discharger.
2. The Discharger's facility serves the City of Solvang with 5,334 service connections and Santa Ynez CSD with 3,000 service connections.
3. The treatment facility is located in Santa Barbara County, to the southwest of Highway 246, at 1644 Oak Street, Solvang, at latitude of 34° 35' 19" W and a longitude of 120° 09' 25" W. The facilities are in the NE ¼ of Section 20, T6N, R31W, SB B&M, as shown on Attachment "A" of this Order.
4. Treated wastewater is disposed of to a polishing pond, which spills into one of two evaporation/percolation ponds located within the Santa Ynez River flood plain. Historically, the Discharger reclaimed some wastewater to irrigate the adjacent Gardener Ranch pasture. According to the Discharger's June 6, 2007 Report of Waste Discharge, wastewater reclamation for irrigation has not occurred for the past eight years and will not occur in the future. The disposal locations are shown on Attachment "B" of this Order.

**PURPOSE OF ORDER**

5. In accordance with Section 13260 of the California Water Code, on June 6, 2007, the Discharger filed a Report of Waste Discharge in order to update and improve its existing wastewater discharger requirements.
6. This Order revises Order No. 97-20, which was adopted by the Central Coast Water Board on September 5, 1997.

## **SITE/FACILITY DESCRIPTION**

### **Water Supply**

7. The City of Solvang's water supply system includes 32 miles of water supply lines, four water supply wells, two connections to the Santa Ynez River Water Conservation District, and a State Water Project (State Water) pump station. The Discharger began using State Water in August 2002. There are at least 1,902 service connections to the City's water supply.

The City of Solvang currently owns and operates three water supply wells (two river wells and one upland well). The City supplements its water supply with State Water due to the low production rate of the three wells. The City blends State Water with well water during the summer months and uses 100 percent State Water during the winter months.

8. According to the Discharger's 2006 Consumer Confidence Report, which are required per Health and Safety Code §116470, water supply quality consistently complies with all state and federal drinking water requirements.

### **Wastewater Treatment System**

9. The Discharger receives wastewater from both the City of Solvang and the Santa Ynez CSD. The Discharger owns and operates two lift stations (Fjord Street and Alisal Street), 40 miles of collection piping, one mile of force main interceptor line and serves approximately 5,334 service connections. Santa Ynez CSD owns and operates one lift station and approximately 15.2 miles of sanitary sewer collection system that includes 685 service lateral connections. Wastewater from Santa Ynez CSD discharges to the Fjord Street lift station, which combines with City of Solvang wastewater and travels through a force main to the wastewater treatment plant headworks.
10. The treatment facility has a design capacity of 1.5 million gallons a day (MGD). The wastewater treatment processes include a mechanical bar screen, screenings compactor and washer, vortex grit separator, and a sequencing batch reactor where the wastewater is mixed, aerated, and settled. Effluent from the reactor is decanted into a polishing pond. Effluent from the polishing pond discharges to the large

evaporation/percolation pond. On high flow days or significant rain events, the large evaporation/percolation pond discharges into a small evaporation/percolation pond for additional storage. A facility layout is shown on Attachment "B" and facility process diagram is shown on Attachment "C" of this Order. A summary of effluent data is presented in the following table.

Summary of Effluent Monitoring Data			
Constituents	Effluent Monitoring Data (Avg/Min/Max) <sup>b</sup>		
	2006	2005	2004
Average Daily Flow (MGD)	0.620	0.451	0.822
	0.559	0.127	0.745
	0.768	0.698	0.949
BOD (mg/L)	16.9	18.9	17.4
	13.6	14.8	10.5
	25.6	28.0	25.0
Total Suspended Solids (mg/L)	4.39	5.83	8.07
	3.25	3.25	6.00
	12.0	11.3	11.2
Total Dissolved Solids (mg/L)	657	726	803
	550	573	715
	774	860	1133
pH (s.u.)	7.3	7.4	7.5
	7.1	7.3	7.4
	7.4	7.5	7.6
Settleable Solids (mL/L)	<0.01	<0.01	<0.01
	<0.01	<0.01	<0.01
	<0.01	<0.01	<0.01
Sodium (mg/L)	129	127	154
	103	106	143
	150	150	166
Chloride (mg/L)	152	158	168
	130	140	148
	196	187	188

a - Total chlorine residual, chlorine use, and total coliform organisms data was not gathered because the discharger was not required to conduct chlorination in accordance with Section B.2, footnote 1 of Order No. 97-20.

b - Average, minimum and maximum values calculated from 36 monthly sampling events for 2004, 2005, and 2006.

11. Waste sludge from the sequencing batch reactor is pumped to the digester where it is aerobically digested. After digestion, sludge is dewatered by a belt press. Biosolids accumulate in roll-off bins and are hauled away by an offsite composting

contractor. Wastewater from the belt press is routed back to the facility's headworks.

12. The disposal ponds are located in the Santa Ynez River floodplain on level topography underlain by alluvial river sand mixed with gravel.

### Surface and Groundwater

13. The Water Quality Control Plan, Central Coast Basin (Basin Plan) was adopted by the Central Coast Water Board on November 19, 1989, and approved by the State Board on August 16, 1990. The Central Coast Water Board approved amendments to the Basin Plan on February 11, 1994 and September 8, 1994. The Basin Plan incorporates statewide plans and policies by reference and contains a strategy for protecting beneficial uses of State waters.
14. Treated wastewater is discharged within the Buellton Hydrologic Area in the Santa Ynez Hydrologic Unit.
15. Present and anticipated beneficial uses of Santa Ynez River that could be affected by the discharge include:
- a. Domestic and municipal water supply (MUN);
  - b. Agricultural supply (AGR);
  - c. Industrial process supply (PRO);
  - d. Industrial Service supply (IND);
  - e. Ground water recharge (GWR);
  - f. Water contact recreation (REC-1);
  - g. Non-contact water recreation (REC-2);
  - h. Wildlife habitat (WILD);
  - i. Cold fresh water habitat (COLD)
  - j. Warm fresh water habitat (WARM);
  - k. Migration of aquatic organisms (MIGR);
  - l. Spawning, reproduction, and/or early development (SPWN);
  - m. Rare, threatened, or endangered species (RARE);
  - n. Freshwater Replenishment (FRSH); and,
  - o. Commercial and Sport Fishing (COMM).

17. Surface water quality objectives established for the Solvang sub-area (within the Santa Ynez sub-basin) are included in the following table.

Surface Water Quality Objective <sup>a</sup>		
Parameter	Units	Objective <sup>b</sup>
Total Dissolved Solids	mg/L	700
Chloride	mg/L	50
Sulfate	mg/L	250
Boron	mg/L	0.4
Sodium	mg/L	60

a – Table 3-7 of the Basin Plan.

b – Objectives are based on annual mean.

18. Depth to groundwater in the vicinity of the disposal ponds is approximately 17 feet throughout the year.

19. Present and anticipated beneficial uses of groundwater in the vicinity of the discharge include the beneficial uses specified in the Basin Plan, which are:

- a. Domestic and municipal water supply (MUN);
- b. Industrial process supply (PRO);
- c. Agricultural water supply (AGR); and,
- d. Industrial service supply (IND).

20. Median groundwater objectives established for the Santa Ynez River Valley groundwater basin are included in the following table.

Median Groundwater Objectives <sup>a</sup>		
Parameter	Unit	Objective <sup>b</sup>
Total Dissolved Solids	mg/L	600
Chloride	mg/L	50
Sulfate	mg/L	10

Median Groundwater Objectives <sup>a</sup>		
Parameter	Unit	Objective <sup>b</sup>
Boron	mg/L	0.5
Sodium	mg/L	20
Nitrogen	mg/L	1

a – Table 3-8 of the Basin Plan

b – Objectives are shown as median values based on data averages.

21. Three groundwater monitoring wells are located within the Santa Ynez River 100-year floodplain as shown on Attachment "B". The upgradient monitoring well is located within the Santa Ynez River riverbed and is used for the City of Solvang's water supply. Downgradient monitoring well (Well #1) and downgradient monitoring well (Well #2) are both located downgradient of the disposal area. Well #1 is located on the north bank of the large evaporation/percolation pond. Well #2 is located on the northwestern bank of the small evaporation/percolation pond. Groundwater flow direction is generally consistent with the flow direction of the Santa Ynez River (west) as supported by depth to groundwater data from the monitoring wells.
22. One sample from the upgradient groundwater well and one sample from the most easterly down gradient well (Well #2) are sufficient for the purposes of monitoring potential impacts on groundwater quality. Quarterly groundwater monitoring is required in January, April, July, and October. Quarterly monitoring includes depth to groundwater, nitrates, total dissolved solids, sodium, chloride, sulfate, boron, fecal colifom, and fecal streptococci. A summary of available groundwater data is presented in the following table.

Summary of Quarterly Groundwater Data			
Parameter	Upgradient Well	Well #1	Well #2
	Avg/Min/Max <sup>a</sup>		
Groundwater Depth (ft)	20.1	17.1	17.4
	12.0	12.6	11.2
	74.0	19.3	22.3
Total Dissolved Solids (mg/L)	953	739	713
	840	630	610
	1000	860	810

Summary of Quarterly Groundwater Data			
Parameter	Upgradient Well	Well #1	Well #2
	Avg/Min/Max <sup>a</sup>		
Sodium (mg/L)	68.6	136	139
	56.0	120	110
	74.0	160	170
Chloride (mg/L)	89.9	137	159
	67.0	84.0	130
	160	170	200
Sulfate (mg/L)	264	123	134
	110	ND	90
	300	200	210
Boron (mg/L)	243	370	398
	210	ND	340
	290	450	530
Nitrate (mg/L)	5.17	2.07	1.90
	0.53	0.58	2.70
	18.0	4.20	1.10
Fecal Coliform (MPN/100mL) <sup>b</sup>	<2.00	84.0	57.7
	<2.00	<2.00	<2.00
	<2.00	300	170
Fecal Streptococci (MPN/100mL) <sup>b</sup>	<2.00	259	55.3
	<2.00	11.0	<2
	<2.00	1732	220

a - Average, minimum and maximum values calculated from 12 quarterly sampling events for 2004, 2005, and 2006.

b - Average, minimum, and maximum values calculated from 8 quarterly sampling events for 2005 and 2006.

23. Groundwater in the basin is generally of poor quality as a result of high mineral content. Elevated total dissolved solids (TDS – typically referred to as salts), and the components of TDS such as chloride, sodium, sulfate, boron, and metals, particularly iron and manganese, are common. Various areas within the basin are also subject to elevated levels of nitrate, presumably resultant of historical agricultural practices.
24. Elevated levels of total dissolved solids, sodium and chloride (salts) are present in the wastewater effluent. Increases in salt concentrations at the Facility are primarily attributable to the domestic use of water softening devices in the residential community and concentration through evaporation of wastewater from the treatment ponds.

**CHANGES TO ORDER**

25. Prohibitions and discharge specifications are consistent with the previous Order. Substantive changes to this Order include the following:
- a. Removal of water reclamation references for irrigation as a result of a change in Discharger's operations to eliminate this activity. Therefore, reclaimed water irrigation is not proposed as part of this Order and is prohibited (Section A.1),
  - b. Addition of groundwater narrative limitations as required per the Basin Plan (Section C.1-4),
  - c. Numeric limitations for groundwater downgradient from the ponds have been changed to narrative limitations (Section C.3); and,
  - d. Development of a salts management program (Section D).

**CEQA**

26. In 1992, the Discharger certified an Environmental Impact Report addressing the wastewater treatment plant expansion up to 2.5 million gallons per day (MGD) in accordance with the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) and the California Code of Regulations. However, wastewater treatment plant expansion is not anticipated at this time due to lack of demand.

**ANTIDegradation**

27. Discharges allowed by this Order will cause water quality degradation in the immediate discharge vicinity, but the waterbody will assimilate the discharge. The degradation will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water of lesser quality. To the extent that any degradation will occur as a result of this Order, it will allow wastewater utility service necessary to accommodate economic and housing expansion in the region. There is no evidence to indicate the discharge will cause significant impacts on current or anticipated beneficial uses. This Order requires the Facility to implement the best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.

**EXISTING ORDERS/GENERAL FINDINGS**

28. On May 29, 2007, the Discharger enrolled in the "Statewide General Waste Discharge for Sanitary Sewer Systems Order No. 2006-0003-DWQ (General WDR)." The General WDR, at a minimum, requires the Discharger to develop a Sanitary Sewer Management Plan (SSMP) by May 2, 2012. The Discharger, when



developing the SSMP, is required to include organization goals, organization structure, legal authority, measures and activities, design and performance provisions; monitoring, measurement and plan modifications; overflow emergency response plan, source control program, system evaluation and capacity assurance plan, and annual updates. The General WDR also requires the Discharger to report sanitary sewer spills using the web-based Sanitary Sewer Overflow Database.

Santa Ynez CSD enrolled separately in the General WDR program on March 30, 2007. Santa Ynez CSD is obligated to the same requirements as the Discharger, but will be required to develop its SSMP by July 2, 2010.

29. This Order contains restrictions on individual pollutants. The effluent limitations for biochemical oxygen demand (BOD) and total suspended solids (TSS) are based on achievable limits for secondary treatment as demonstrated by historical facility effluent data. Effluent limitations in this Order for nitrate, total dissolved solids, sodium, chloride, sulfate and boron have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to state law. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by U.S. Environmental Protection Agency (EPA) prior to May 30, 2000. The requirements of the Order take into consideration past, present, and probable future beneficial uses of the receiving waters, the environmental characteristics, including water quality, of the Santa Ynez River hydrographic unit, and coordinated control of all factors which affect water quality in the area.
30. Discharge of waste is a privilege, not a right, and authorization to discharge is conditional upon the discharge complying with provisions of Division 7 of the California Water Code and any more stringent effluent limitations necessary to implement water quality control plans, to protect beneficial uses, and to prevent nuisance. Compliance with this Order should ensure this and mitigate any potential adverse changes in water quality due to the discharge.
31. On July 26, 2007, the Central Coast Water Board notified the Discharger and interested agencies and persons of its intent to revise waste discharge requirements for the discharge and has provided them with a copy of the proposed order and an opportunity to submit written views and comments. Comments on the draft order were to be submitted in writing no later than August 26, 2007. Comments were not received by Central Coast Water Board staff on or before August 26, 2007. The Discharger posted the notice in the Santa Barbara News Press on August 26, 2007.
32. According to the Discharger's Report of Waste Discharge submitted on June 6, 2007, recycled water is no longer being produced or distributed. Furthermore, the Discharger has no future plans to distribute recycled water.

33. After considering all comments pertaining to this discharge during a public hearing on October 19, 2007, this Order was found consistent with the above findings.

**IT IS HEREBY ORDERED**, pursuant to authority in Section 13263 of the California Water Code, that the City of Solvang, its agents, successors, and assigns, may discharge waste from its wastewater treatment plant providing it complies with the following:

All technical and monitoring reports submitted pursuant to this Order are required pursuant to Section 13267 of the California Water Code. The Central Coast Water Board requires these reports to determine compliance with this Order and the impacts, if any, of the discharge on receiving waters. Failure to submit reports in accordance with schedules established by this Order, or failure to submit a report of sufficient technical quality to be acceptable to the Executive Officer, may subject the Discharger to enforcement action pursuant to Section 13268 of the California Water Code.

(Note: Other prohibitions and conditions, definitions, and the method of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated January 1984.)

(Note: Throughout these requirements footnotes are listed to indicate the source of requirements specified. Requirement footnotes are as follows:

<sup>BP</sup> = Basin Plan

<sup>ROWD</sup> = Report of Waste Discharge Design Specification

Requirements not referenced are based on Staff's professional judgment.)

#### **A. PROHIBITIONS**

1. Discharge to areas other than the disposal ponds shown in Attachment "B" is prohibited.
2. Discharge of any wastes, including overflow, bypass, seepage, overspray and runoff from transport, treatment, or disposal systems, to adjacent properties, adjacent drainage ways, or to the Santa Ynez River is prohibited.
3. Bypass of the treatment facility is prohibited and discharge of improperly treated wastewater directly to the evaporation/percolation ponds is prohibited.
4. Discharge of wastes within 100 feet of any potable water supply well or drainage way is prohibited.

**B. DISCHARGE SPECIFICATIONS**

1. Daily flow averaged over each month shall not exceed 1.5 MGD. <sup>ROWD</sup>
2. Effluent discharged to evaporation/percolation ponds within the Santa Ynez River floodplain shall not exceed the following limitations:

Parameter	Units	30-Day Average	Daily Max
BOD <sub>5</sub>	mg/L	30	45
Suspended Solids	mg/L	20	40
Settleable Solids	ml/L	0.1	0.3
Total Dissolved Solids	mg/L	1,000	1,400
Sodium	mg/L	150	250
Chloride	mg/L	150	250
pH	Standard Units	6.5 to 8.4	

3. Chlorination of effluent and ponds shall occur when the Discharger is warned by the County Flood Control District that Santa Ynez River flooding may occur and to continue disinfection until flood warnings cease.

If chlorination of the effluent occurs, the median concentration total coliform bacteria measured in treated effluent shall not exceed most probable number (MPN) of 23 organisms per 100 milliliters (mL) as determined from the last seven days for which analysis have been completed. The daily maximum number of total coliform bacteria shall not exceed 2,300 MPN/100mL.

4. Extraneous surface drainage shall be excluded from all treatment, storage, and disposal facilities.
5. Normal operating freeboard shall be at least 2.0 feet in the evaporation/percolation ponds at all times.
6. The treatment, storage, and disposal facilities shall be managed to exclude the public and posted to warn the public of the presence of wastewater.

**C. GROUNDWATER LIMITATIONS**

1. Groundwater shall not contain taste or odor producing substance in concentrations that adversely affect beneficial uses.<sup>BP</sup>
2. Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life; or results in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life.<sup>BP</sup>
3. Groundwater shall not contain concentrations of organic or inorganic chemicals in excess of the limiting concentrations set forth in California Code of Regulations, Title 22, Division 4, Chapter 15, Article 5.5, Section 64444 (organic) and Article 4, Section 64431 (inorganic).<sup>BP</sup>
4. Groundwater shall not contain concentrations of chemical constituents in amounts that adversely affect the agricultural supply beneficial use. Interpretation of adverse effects shall be as derived from the *University of California Agricultural Extension Service guidelines provided in Table 3-3 of the Central Coast Basin Plan*.<sup>BP</sup>
5. The discharge shall not cause a significant increase in mineral constituent concentrations in the underlying groundwater.

#### D. SALTS MANAGEMENT PROGRAM

1. The Discharger shall maintain an ongoing salts management program with the intent of reducing mass loading of salts in treated effluent to a level that will ensure compliance with effluent limitations and not negatively impact beneficial uses of groundwater.
2. Salt reduction measures shall focus on all potential salt contributors to the collection system, including water supply and residential dischargers. The Discharger shall evaluate Assembly Bill 334 and determine its feasibility to reduce salt loading from the domestic use of water softeners.
3. The salt management program shall also address the concentration of salts in the wastewater treatment process as a result of excessive hydraulic retention times.
4. As part of the salts management program, the Discharger shall submit an annual engineering report of salt reduction efforts. This report shall include, at a minimum:
  - a. Calculations of annual salt mass discharged to the wastewater treatment system and disposal ponds with an accompanying analysis of contributing sources;
  - b. Analysis of wastewater evaporation/salt concentration effects;
  - c. Analysis of groundwater monitoring results related to salt constituents;
  - d. Analysis of potential impacts of salt loading on the groundwater basin;

- e. A summary of existing salt reduction measures; and,
  - f. Recommendations and time schedules for implementation of any additional salt reduction measures.
5. Annual salt management reports are due January 20<sup>th</sup> of each year and may be included as part of the annual monitoring report. The first annual salt management report is due January 20, 2010.

#### E. PROVISIONS

1. Order No. 97-20, "Waste Discharge Requirements for the City of Solvang and the Local Sewering Entity of Santa Ynez CSD, Santa Barbara County," adopted by the Central Coast Water Board on September 5, 1997, is hereby rescinded.
2. The Discharger shall comply with "Monitoring and Reporting Program No. R3-2007-0069," as adopted by the Central Coast Water Board and as may be amended by the Executive Officer.
3. The Discharger shall comply with all items of the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated January 1984.
4. Physical damage to pond levees caused by floods shall be repaired as soon as feasible after flood waters subside and shall be functional within 30 days of the day they are removed from service due to flood damage.
5. The Discharger shall maintain a comprehensive operation and maintenance manual for the wastewater treatment, storage, and disposal facilities.
6. Pursuant to Title 23, Chapter 3, Subchapter 9, of the California Code of Regulations, the Discharger must submit a written report to the Executive Officer not later than **May 19, 2017**, addressing:
  - a. Whether there will be changes in the continuity, character, location, or volume of the discharge; and,
  - b. Whether, in their opinion, there is any portion of the Order that is incorrect, obsolete, or otherwise in need of revision.
7. The Discharger shall develop a workplan for installation of a representative groundwater monitoring well network. The workplan shall be submitted to the Central Coast Water Board by **April 20, 2008**. At a minimum, the workplan shall describe existing hydrogeologic conditions and an evaluation of optimal groundwater monitoring locations. The representative groundwater monitoring well

network shall be installed and letter report confirming final installation shall be submitted by **January 20, 2010**.

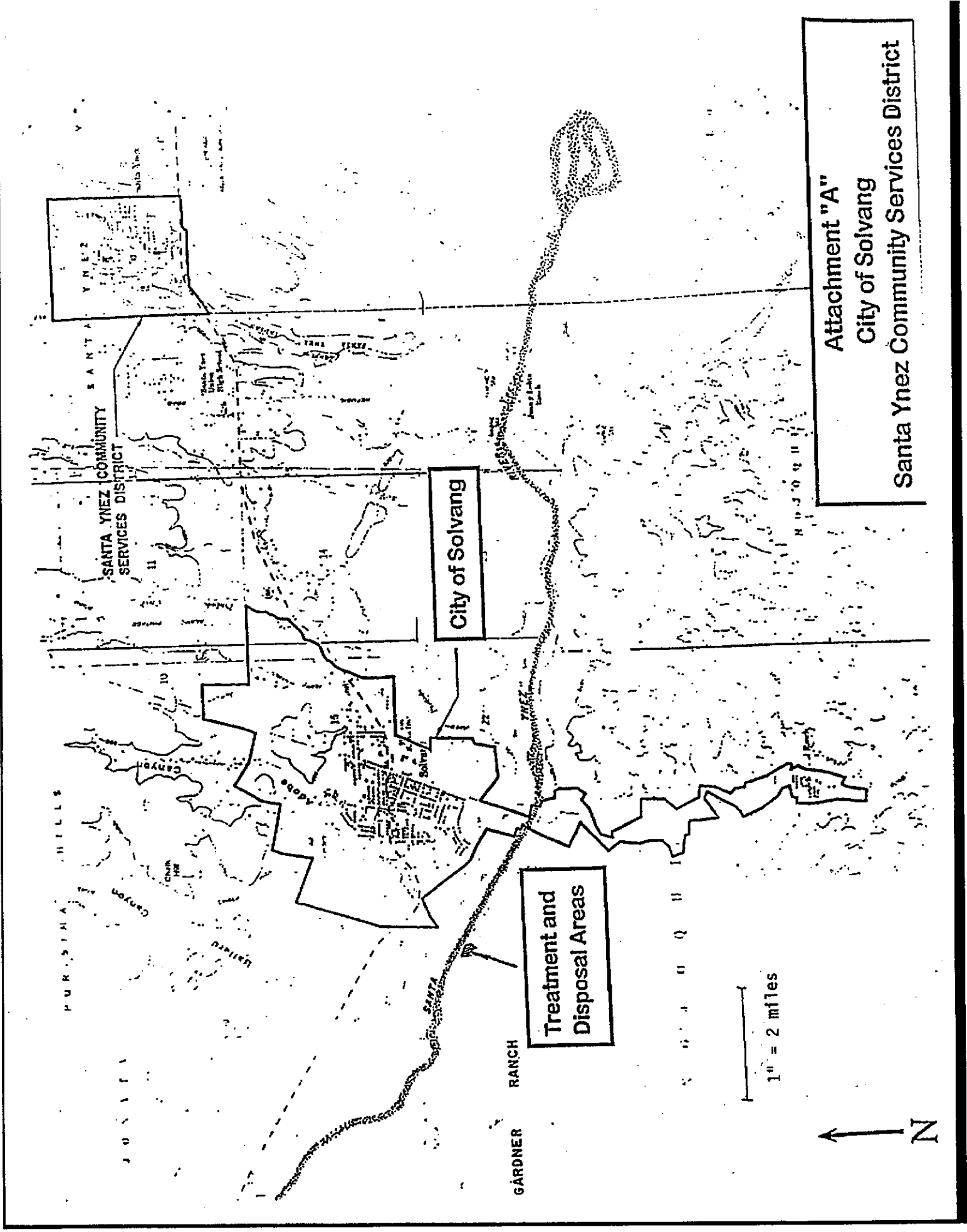
I, Roger W. Briggs, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Coast Region, on **October 19, 2007**.

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Roger W. Briggs  
Executive Officer

DLC  
126-01

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SANTA YNEZ COMMUNITY SERVICES DISTRICT

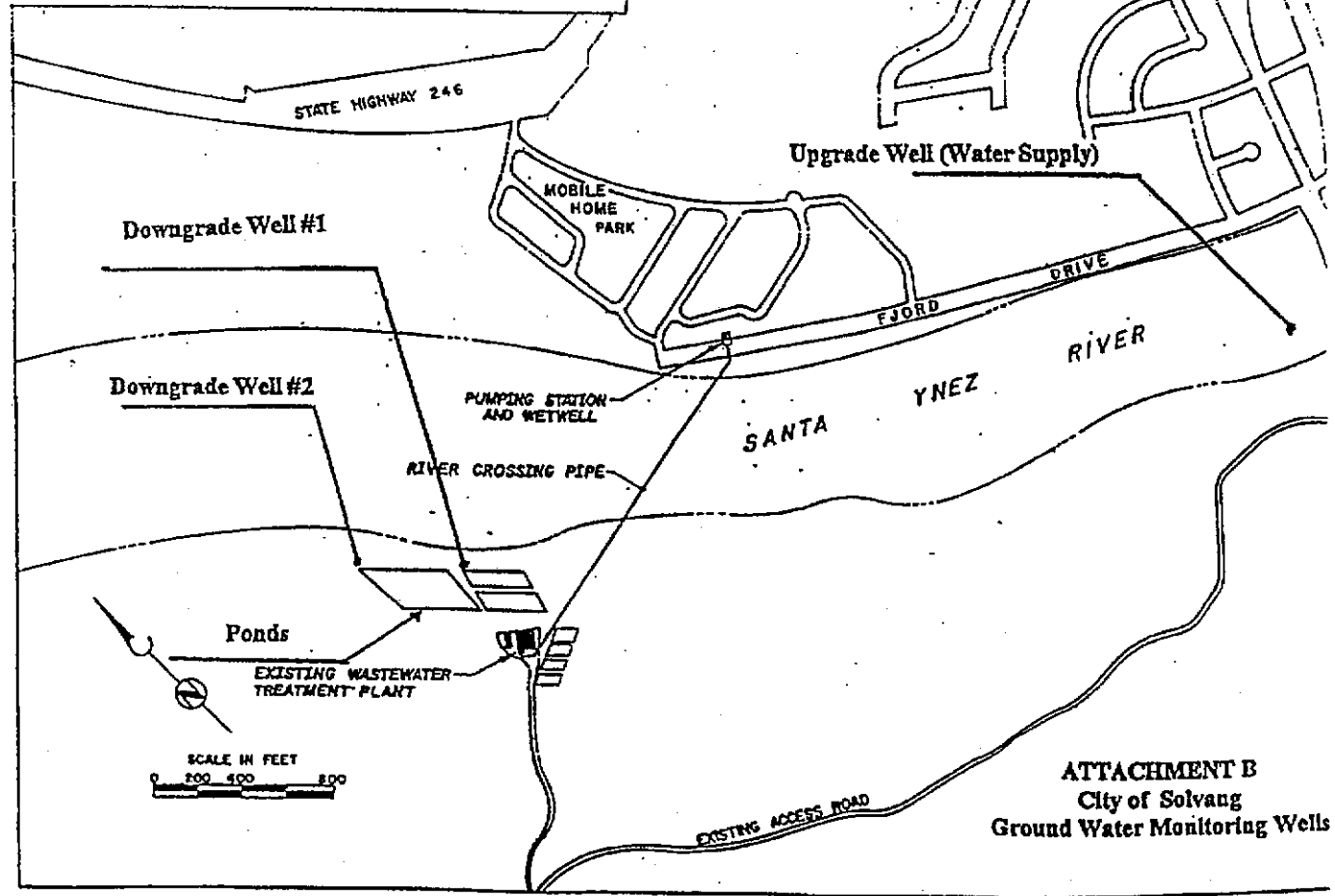
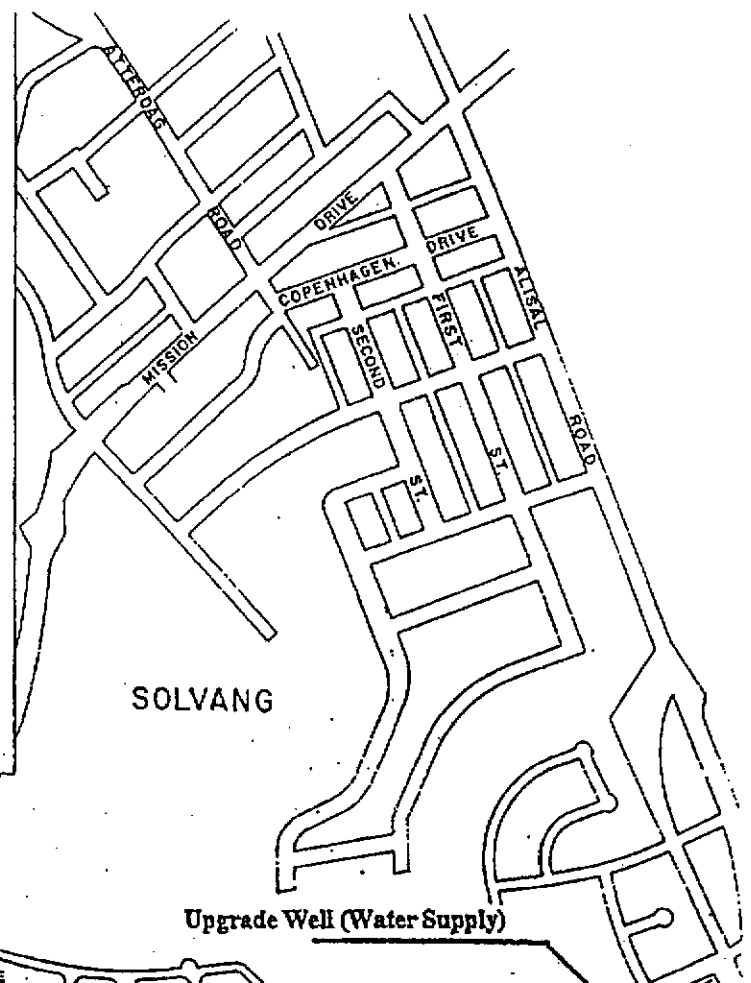
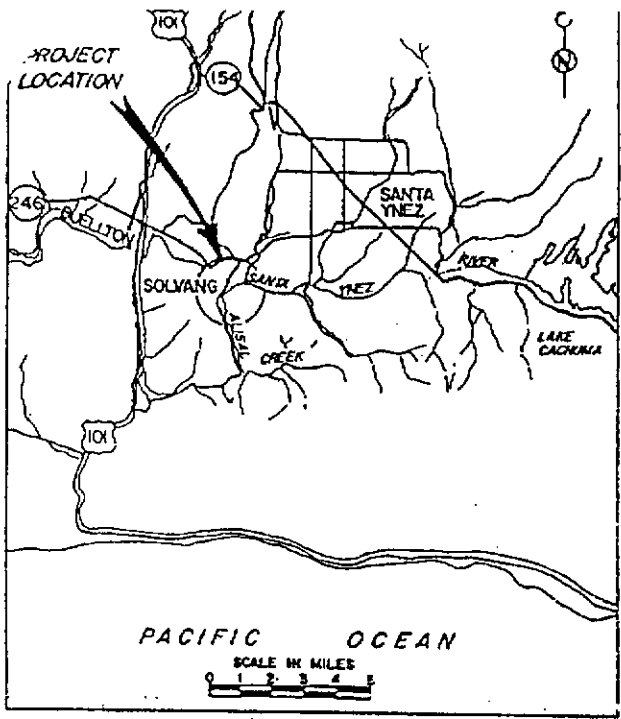
City of Solvang

Treatment and Disposal Areas

Attachment "A"  
City of Solvang  
Santa Ynez Community Services District

1" = 2 miles

N



**ATTACHMENT B**  
**City of Solvang**  
**Ground Water Monitoring Wells**



Attachment C

Evaporation/percolation  
Pond #1

Evaporation/Percolation  
Pond #2 (Emergency Spillover)

Polishing Pond

Effluent Monitoring  
Point

N

Aerobic Digester

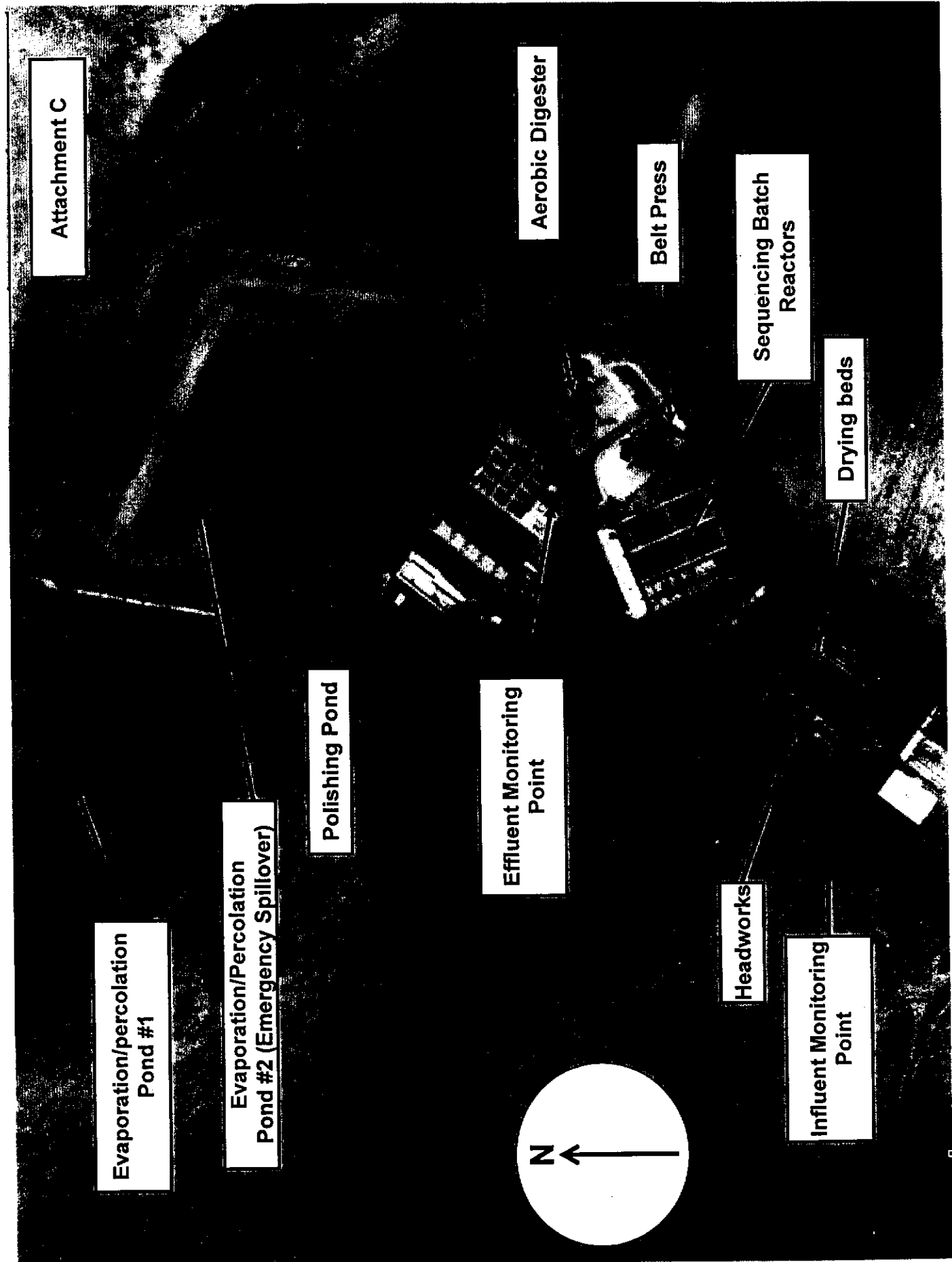
Belt Press

Headworks

Influent Monitoring  
Point

Sequencing Batch  
Reactors

Drying beds



# Treatment Processes

