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REGIONAL SUPERVISOR
FIELD OPERATIONS

In Reply Refer To: MS 5231

September 10, 1996

Tana Oil and Gas Corporation
Attention: Mr. Thomas S. Strother
500 North Water Street, Suite 1100 N.
Corpus Christi, Texas 78471-0901

Gentlemen:

Reference is made to the following plan received August 27, 1996:

Type Plan - Initial Development Operations Coordination Document
Lease - OCS-G 15794
Block - A-416
Area - High Island
Activities Proposed - Platform A and Wells A-1 and A-2

In accordance with 30 CFR 250.34, this plan is hereby deemed submitted and is now being considered for approval.

Your control number is N-5499 and should be referenced in your communication and correspondence concerning this plan.

Sincerely,

(Signature)

Donald C. Howard
Regional Supervisor
Field Operations

bcc: Lease OCS-G 15794 POD File (MS 5032)
MS 5034 w/public info. copy of the plan
and accomp. info.

BNewton:cic:08/29/96:DOCDOM

NOTED-SCHEXNAILDRE

Tana Oil and Gas Corporation

512/884-1831

500 North Water Street

Suite 1100 N.

Corpus Christi, Texas 78471-0901

August 23, 1996

Mr. Don Howard
Regional Supervisor
Office of Field Operations
U.S. Department of the Interior
Minerals Management Service
1201 Elmwood Park Boulevard
New Orleans, LA 70123-2394



RE: Initial Development Operations Coordination Document
Lease OCS-G 15794, High Island Block A-416
OCS Federal Waters, Gulf of Mexico, Offshore, Texas

Gentlemen:

In accordance with the provisions of Title 30 CFR 250.34, Tana Oil and Gas Corporation (Tana) hereby submits for your review and approval nine (9) copies of a Initial Development Operations Coordination Document for Lease OCS-G 15794, High Island Block A-416, Offshore, Texas. Five (5) copies are "Proprietary Information" and four (4) copies are "Public Information".

Excluded from the Public Information copies are certain geologic discussions, depth of wells and structure map.

Tana anticipates commencing activities under this proposed Initial Development Operations Coordination Document on December 1, 1996.

Should additional information be required please contact the undersigned or our regulatory agent, J. Connor Consulting, Inc., Attention: Sharon Perez at (713) 578-3388.

Sincerely,

TANA OIL AND GAS CORPORATION

Thomas S. Strother /s/

Thomas S. Strother
Vice President, Engineering

TSS:SLP:crp
Enclosures

"Public Information"

TANA OIL AND GAS CORPORATION
INITIAL DEVELOPMENT
OPERATIONS COORDINATION DOCUMENT
HIGH ISLAND BLOCK A-416
LEASE OCS-G 15794

Tana Oil and Gas Corporation (Tana), submits this proposed Initial Development Operations Coordination Document in accordance with the regulations contained in Title 30 CFR 250.34 and more specifically defined in the Minerals Management Service Letters to Lessees and Operators dated October 12, 1988 and September 5, 1989.

HISTORY OF LEASE

Lease OCS-G 15794 was acquired by Tana Oil and Gas Corporation at Central Gulf of Mexico Lease Sale 155 held on September 15, 1996. The lease was issued with an effective date of December 1, 1995 and a primary term ending date of November 30, 2000.

Under the approved Joint Initial Plan of Exploration, Tana Oil and Gas Corporation proposed the drilling, completion and testing of five (5) exploratory wells. Tana has recently drilled and temporarily abandoned Lease OCS-G 15794, Well No. 1.

Tana is the duly designated operator of the subject lease.

In accordance with Letter to Lessees and Operators (LTL) dated November 5, 1995, which amends Title 30 CFR Part 256 surety bond requirements applicable to OCS lessees and operators, Tana is in the process of obtaining a \$500,000 development bond to meet the Minerals Management Service requirements.

SCHEDULE OF OPERATIONS

This Initial Development Operations Coordination Document proposes to install a typical tripod structure (to be designated as Platform A) over existing Well No. 1 (to be re-named as Well No. A-1), and produce one additional well to be designated as Well No. A-2 (to be drilled and completed under the Initial Plan of Exploration), and lay a 4" R-O-W pipeline to transport produced hydrocarbons to a subsea tie-in point with Louisiana Land and Exploration's 8" pipeline in High Island Block A-154.

A well location plat and table showing the surface and bottom hole locations of the subject wells, total depth and water depth are included as Attachments A-1 and A-2.

Activities under this Initial Development Operations Coordination Document for High Island Block A-416 will commence on December 1, 1996.

The following schedule details the chronological order of the proposed events leading to the full start up of production.

<u>Activity</u>	<u>Activity Schedule Approximate Date</u>
1. Commence Installation of 4" R-O-W Pipeline	December, 1996
2. Commence Installation of Platform "A"	December, 1996
3. Hook-up and Commence Production of Well No. A-1 and A-2	February, 1997

DESCRIPTION OF DRILLING UNIT

Offshore development activities are carried out from mobile drilling rigs. The six most common types of mobile rigs employed for development drilling offshore are platform rigs, submersible drilling rigs, semi-submersible drilling rigs, jack-up drilling rigs, drillships, and drill barges.

The subject wells will be completed under the previously approved Plan of Exploration, utilizing a typical jack-up rig. Once a rig is selected, the rig specifications will be submitted along with the appropriate permits to complete.

DESCRIPTION OF PLATFORM

The proposed structure in High Island Block A-416 will be a typical tripod structure consisting of a boat landing, main deck and helideck. A schematic of the subject structure is included as Attachment B.

All hydrocarbon handling piping and valves will be designed, installed and operated to prevent pollution from the proposed structure.

Maintenance or repairs which are necessary to prevent pollution of offshore waters shall be undertaken immediately.

There shall be no disposal of equipment, cables, containers, or other materials into offshore waters.

STRUCTURE MAP

A current structure map drawn to the top of each prospective hydrocarbon accumulation showing the surface and bottom hole location of the subject wells is included as Attachment C.

BATHYMETRY MAP

Water depths range from approximately 136 feet to 154 feet. The seafloor generally slopes to the south southeast at a maximum gradient of 10 feet per mile.

A Bathymetry map showing the surface location of the subject wells and the proposed structure is included as Attachment D.

SHALLOW HAZARDS

In March, 1996, KC Offshore, L.L.C. conducted a geophysical survey of High Island Block A-416 for Tana Oil and Gas Corporation. The purpose of the survey was to evaluate geologic conditions and inspect for potential hazards or constraints to lease development.

A shallow hazards analysis was prepared for the existing surface location and was submitted with the Initial Plan of Exploration.

OIL SPILL CONTINGENCY PLAN

All construction and production operations shall be performed in accordance with industry standards to prevent pollution of the environment. Tana Oil and Gas Corporation's Oil Spill Contingency Plan has been approved by Minerals Management Service, and the annual update is currently being reviewed for approval by MMS. This plan designates an Oil Spill Response Team consisting of Tana Oil and Gas Corporation personnel and contract personnel. This team's duties are to eliminate the source of any spill, remove all sources of possible ignition, deploy the most reliable means of available transportation to monitor the movement of a slick, and contain and remove the slick if possible.

Tana Oil and Gas Corporation's Oil Spill Response Team attends drills for familiarization with pollution-control equipment and operation procedures on an annual basis.

Tana is a member of Clean Gulf Associates (CGA). The CGA stores pollution control equipment at two locations in Texas, at Port Aransas and Galveston; five locations in Louisiana, at Venice, Grand Isle, Intracoastal City, Houma and Cameron and one location in Theodore, Alabama.

Each base is equipped with fast response skimmers and there is a barge mounted high volume open sea skimmer based at Grand Isle, Louisiana. In addition to providing equipment, the CGA also supplies advisors for clean-up operations. Equipment available from CGA and the base it is located at is listed in the CGA Manual, Volume I, Section III.

Tana will make every effort to see that a spill is responded to as quickly as possible. Response equipment and response times will be suitable for anticipated environmental conditions in the area.

In good weather conditions fast response with oil boom, skimmers, pump and storage tanks would require approximately 13 to 15 hours, including preparation time as indicated below. A heavy equipment system response would require approximately 24-36 hours, including 6 hours preparation time.

	<u>Hours</u>
1. Procurement of boat capable of handling spill containment equipment and deployment to nearest CGA Base in Galveston, Texas	2.5
2. Load out Fast Response Unit	1.5
3. Travel Time to lease site	
(Inland Travel Time - 6 miles @ 6 MPH)	1.0
(Open Water Travel Time - 80 miles @ 10 MPH)	8.0
4. Deployment of Equipment	<u>1.0</u>
Estimated Total Time	14.0

Equipment located in Galveston, Texas would be utilized first with additional equipment transported from the nearest equipment base as required.

Utilizing the summary of the trajectory analysis (for 10 days) as presented in the MMS's Oil Spill Risk Analysis for the Central and Western Gulf of Mexico Lease Sales 157 and 161, the

probability of an oil spill from High Island Block A-416 is as follows:

<u>Area</u>	<u>Land Segment</u>	<u>%</u>	<u>CGA Map No.</u>
High Island Block A-416	Matagorda, TX	4%	Maps 2 & 3
	Brazoria, TX	4%	Map 3
	Galveston, TX ET AL	3%	Maps 3 & 4

If a spill should occur from the existing surface location, Tana would immediately activate its Oil Spill Response Team, determine from current conditions the probable location and time of land fall by contacting SpillNet for assistance in predicting spill movement. Then, using the Clean Gulf Operations Manual, Volume II, identify the biologically sensitive area and determine the appropriate response mode.

Volume II, Sections V and VI of the CGA Manual contains maps as listed above, equipment containment/cleanup protection response modes for the sensitive areas and depicts the protection response modes that are applicable for oil spill clean-up operations. Each response mode is schematically represented to show optimum deployment and operation of the equipment in areas of environmental concern. Implementation of the suggested procedures assures the most effective use of the equipment and will result in reduced adverse impact of oil spills on the environment. Supervisory personnel have the option to modify the deployment and operation of equipment to more effectively respond to site-specific circumstances.

NEW OR UNUSUAL TECHNOLOGY

No new techniques or unusual technology will be required for these operations.

LEASE STIPULATIONS

Oil and gas exploration activities on the OCS are subject to stipulations developed before the lease sale and would be attached to the lease instrument, as necessary, in the form of mitigating measures. The MMS is responsible for ensuring full compliance with stipulations.

Lease Stipulation No. 1 attached to and made part of the subject lease instrument requires preparation of a Cultural Resources Report assessing the potential existence of any cultural resources.

As stated in Minerals Management Service Letter to Lessees (LTL) dated September 5, 1995, effective November 21, 1994, a final rule was published in the Federal Register which added a new section, 30 CFR 250.26, titled "Archaeological Reports and Surveys" to Minerals

Management Service Operating Regulations. This rule was developed to convert the requirements contained in Stipulation No. 1 into regulations which apply to all leases located within areas determined as having a high probability for the occurrence of archaeological resources.

CULTURAL RESOURCES

By letter dated September 19, 1995, Minerals Management Service has classified High Island Block A-416 as a high probability pre-historic area for potential cultural resources.

A Cultural Resources Report was submitted with the Initial Plan of Exploration.

DISCHARGES

All discharges associated with producing the subject wells will be in accordance with regulations implemented by Minerals Management Service (MMS), U. S. Environmental Protection Agency (EPA), and the U. S. Coast Guard (USCG).

The MMS issued a special advisory notice (NTL 86-11) strongly encouraging the oil and gas industry to take special educational, operational and awareness measures to reduce or eliminate contributions to marine debris in the Gulf of Mexico.

Annex V of the International Convention for the Prevention of Pollution from ships, also known as MARPOL Protocol, prohibits the dumping of all plastic wastes, including plastic packaging materials and fishing gear.

EPA's Western Gulf of Mexico NPDES General Permit GMG290000 addresses the discharge limitations and testing protocol for drilling fluids, cuttings and associated wastes.

Discharges will contain no free oil and will be in compliance with and monitored as required by the permit. Any drilling fluid contaminated with oil will be transported to shore for proper disposal at an authorized disposal site.

Solid domestic wastes will be transported to shore for proper disposal at an authorized disposal site, and sewage will be treated on location by U. S. Coast Guard approved marine sanitation devices.

Mud may be discharged for purposes of dilution or at end of well. Surveillance of the fluid is accomplished through daily inventory of mud and chemicals added to the system; in addition to monthly and end-of-well LC50 toxicity tests required by EPA.

PROJECTED EMISSIONS

Offshore air emissions related to the proposed activities result mainly from the drilling rig operations, helicopters and service vessels. These emissions occur mainly from combustion or burning of fuels and natural gas and from venting or evaporation of hydrocarbons. The combustion of fuels occurs primarily on diesel-powered generators, pumps or motors and from lighter fuel motors. Other air emissions can result from catastrophic events such as oil spills or blowouts.

Primary air pollutants associated with OCS activities are nitrogen oxides, carbon monoxide, sulphur oxides, volatile organic compound, and suspended particulate.

Projected Air Quality Emissions, included as Attachment E, provide for the installation of Platform A and for the production operations associated with the subject wells.

ONSHORE SUPPORT BASE

High Island Block A-416 is located approximately 75 miles from the nearest Texas shoreline and approximately 80 miles from the shorebase located in Galveston, Texas. Water depths within the block range from approximately 136 feet to 154 feet. A vicinity map showing the location of High Island Block A-416 relative to the shoreline and onshore base is included as Attachment F.

Tana will utilize existing onshore facilities located in Galveston, Texas. This will serve as port of debarkation for supplies and crews. No onshore expansion or construction is anticipated with respect to the proposed activities.

This base is capable of providing the services necessary for the proposed activities. It has 24-hour service, a radio tower with a phone patch, dock space, equipment and supply storage base, drinking and drill water, etc. Support vessels and travel frequency during production activities are approximated as follows:

PRODUCTION

Crew Boat	7 Trips Per Week
Supply Boat	1 Trip a Month
Helicopter	As needed

AUTHORIZED REPRESENTATIVE

Inquiries may be made to the following authorized representative:

Sharon Perez
J. Connor Consulting, Inc.
16225 Park Ten Place, Suite 500
Houston, Texas 77084
(713) 578-3388

LIST OF ATTACHMENTS

- A Well Location Table and Plat
- B Platform Schematic
- C Structure Map
- D Bathymetry Map
- E Air Emissions Report
- F Vicinity Map

TANA OIL AND GAS CORPORATION
INITIAL DEVELOPMENT
OPERATIONS COORDINATION DOCUMENT
HIGH ISLAND BLOCK A-416
LEASE OCS-G 15794

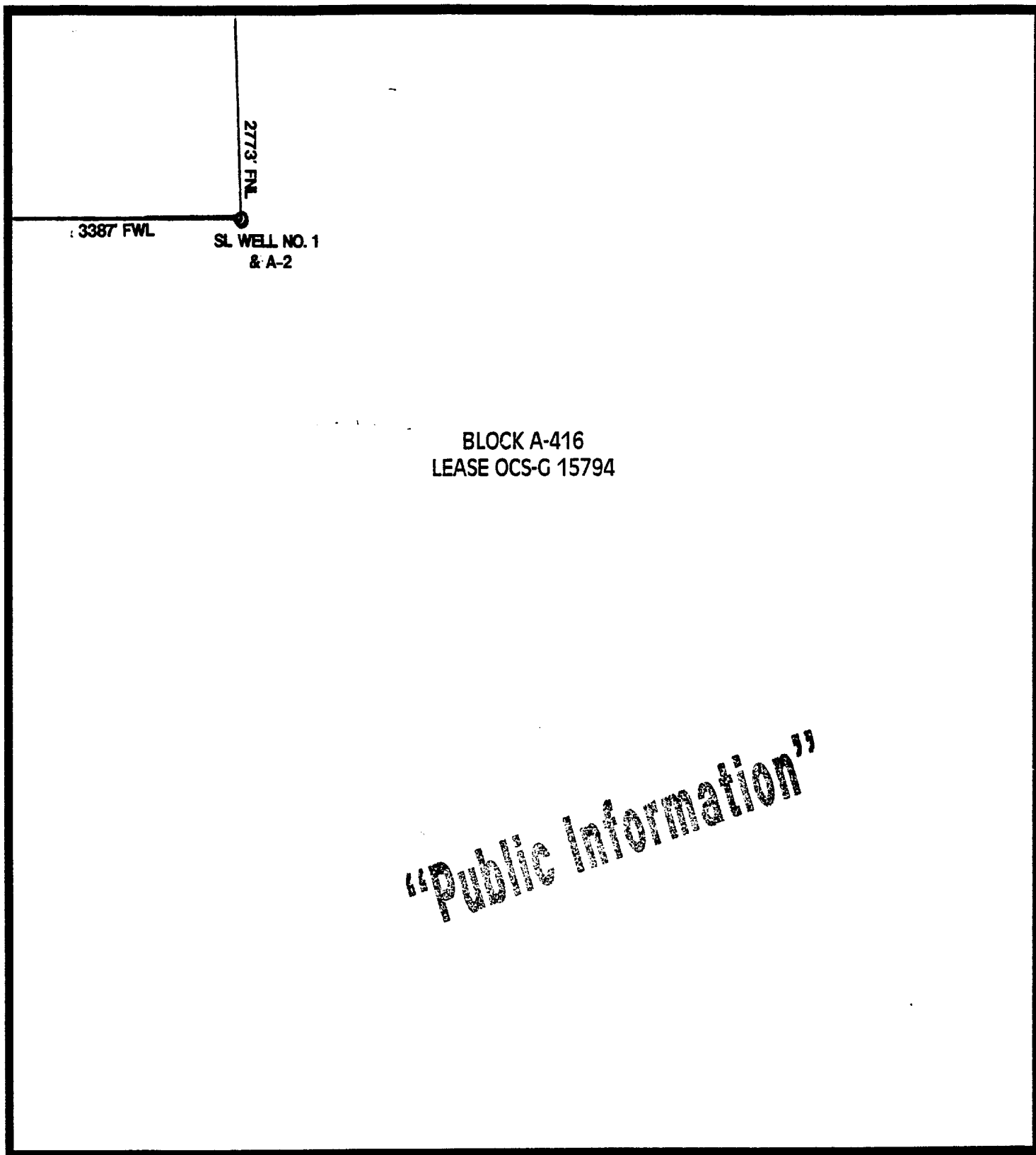
WELL LOCATION TABLE

EXISTING

<u>WELL</u>	<u>LOCATION</u>	<u>WATER DEPTH</u>	<u>TOTAL DEPTH</u>	<u>TOTAL DAYS</u>
001	SL: 2773' FNL & 3387' FWL		138'	N/A

PROPOSED

A-2	PSL: 2780' FNL & 3400' FWL		138'	N/A
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SCALE: 1" = 2000'

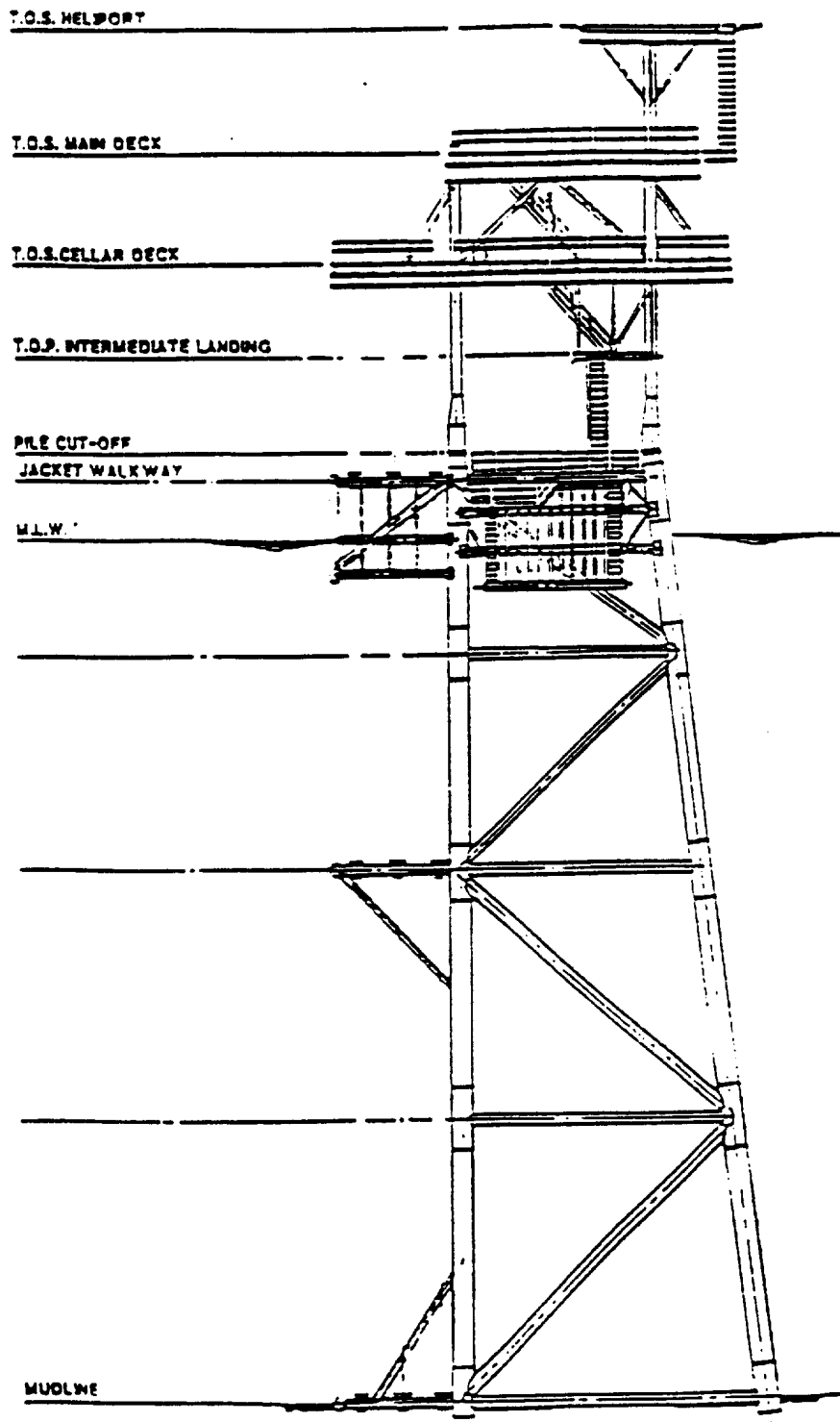
TANA OIL AND GAS CORPORATION

HIGH ISLAND BLOCK A-416

LOCATION PLAT

ATTACHMENT A-2

TYPICAL TRIPOD PRODUCTION PLATFORM SCHEMATIC



SCALE: 1/16" = 1'-0"

BEST AVAILABLE COPY

A - 415 A - 416

Surf. Loc.

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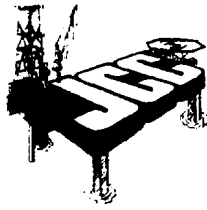
A - 418

A - 417

HIGH ISLAND AREA, SO. ADD.
OFFSHORE TEXAS
BLOCKS A-415 & A-416
BATHYMETRY MAP.

ATTACHMENT D

AIR EMISSION CALCULATIONS
J. Connor Consulting, Inc.



AIR QUALITY REVIEW

COMPANY: TANA OIL AND GAS CORPORATION
AREA: HIGH ISLAND
BLOCK: A-416
LEASE: OCS-G 15794
RIG: NOT APPLICABLE
WELLS: NO. 1 AND A-2
LATITUDE: X = 1,335,429
LONGITUDE: Y = 10,340,742

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COMPANY CONTACT: SHARON PEREZ
TELEPHONE NO.: (713) 578-3388

REMARKS: THIS INITIAL DEVELOPMENT OPERATIONS COORDINATION
DOCUMENT PROVIDES FOR THE INSTALLATION OF A
TYPICAL TRIPOD STRUCTURE (TO BE DESIGNATED
AS PLATFORM "A") AND COMMENCEMENT OF PRODUCTION.

ATTACHMENT E

GULF OF MEXICO AIR EMISSION CALCULATIONS

General

This document (MMS.WK3) was prepared through the cooperative efforts of those professionals in the oil industry including the API/OOC Gulf of Mexico Air Quality Task Force, who deal with air emission issues. This document is intended to standardize the way we estimate an air emission inventory for Plans of Exploration (POE) and Development, Operations, Coordination Documents (DOCD) approved by the Minerals Management Service (MMS). It is intended to be thorough but flexible to meet the needs of different operators. This first sheet gives the basis for the emission factors used in the emission spreadsheet as well as some general instructions. This file contains 8 sheets: A,B,C,D,E,F,G,& H. A is the Instruction Sheet, B is the Title Sheet, C is the Factors Sheet, D,E,F, & G are the Emission Spreadsheets and H is the Summary Sheet. These sheets will describe and calculate emissions from an activity.

Title Sheet

The Title Sheet requires input of the company's name, area, block, OCS-G number, platform and/or well(s) in the necessary lines. This data will automatically be transferred to the spreadsheet and summary sheet.

Factor Sheet

The emission factors were compiled from the latest AP-42 references or from industry studies if no AP-42 reference was available. Factors can be revised as more data becomes available. A change to this Factor Sheet will be automatically changed in Emission Spreadsheet.

The basis for the factors is as follows:

1. NG Turbines Fuel usage scf/hr = HP X 9.524 (10,000 btu/HP-hr / 1050 btu/scf)
2. NG Engines Fuel usage scf/hr = HP X 7.143 (7,500 btu/HP-hr / 1050 btu/scf)
3. Diesel Fuel usage gals/hr = HP X 0.0483 (7,000 btu/HP-hr / 145,000 btu/gal)

Emission Factors

Natural Gas Prime Movers

1. TNMOC refers to total non-methane organic carbon emissions and these can be assumed equivalent to VOC emissions.
2. The sulfur content assumed is 2000 grains/mmscf (3.33 ppm). If your concentration is different then ratio your emission factor up or down.

Diesel-Fired Prime Movers

1. Diesel sulfur level 0.4% by wt
2. For boats use > 600 HP factors based on AP-42 Vol. II, Table II-3-3.
Those figures closely match the above values. Include only the emissions from the boats within 25 mile radius of the well/platform.
3. For diesel engines <600 HP VOC emissions equal total HC emissions; for diesel engines >600 HP VOC emissions equal non-methane HC emissions.

Heaters/Boilers/Firetubes/NG-Fired

1. NG Sulfur content is 2000 grains per million cu ft
2. VOCs emissions based on total non-methane HCs

Gas Flares

1. Flare is non-smoking
2. 1050 btu/cu. ft. for NG heating value
3. The sulfur content assumed is 2000 grains/mmscf (3.33 ppm). If your concentration is different then ratio your emission factor up or down or you may use the following formula

$$\text{H}_2\text{S flared (lbs/hr)} = \text{Gas flared (cu ft/hr)} \times \text{ppm H}_2\text{S} \times 10\text{E-06} \times 34/379$$

$$\text{SO}_x \text{ emis (lbs/hr)} = \text{H}_2\text{S flared (lbs/hr)} \times 64/34$$

Liquid Flares

1. Assume 1% by wt Sulfur maximum in the crude oil.
2. VOC equals non-methane HCs
3. Particulate emissions assumes Grade 5 oil.

Tanks

1. Tank emissions assumes uncontrolled fixed roof tank.

Fugitives

1. Fugitives are based on the 1993 Star Environmental Report. It requires that you count or estimate your components.

Glycol Dehydrator Vent

1. The dehydrated gas rate in SCF/HR must be entered in the spreadsheet. The emission factor is from the compilation of the Louisiana Survey and an average emissions per gas rate.

Gas Venting

1. The emission factor is based on venting unburned natural gas of average weight.

Emissions Spreadsheet

The emissions from an operation should be presented for a calendar year (1994, 1995, etc.). The operation may include drilling only or drilling in conjunction with other activities such as pipeline installation or production operations. For the first year use sheet D, for the second year use sheet E, third use F, fourth use G and if you need more you will have to insert a sheet and copy the spreadsheet to the new sheet. The year (CELL D:A38) should be changed and the different operating parameters entered to calculate revised emissions for that subsequent year. The spreadsheet will calculate maximum fuel usage (UNIT/HR) using the known horsepower. It will assume maximum fuel usage is equal to actual fuel

(UNIT/DAY) usage unless the actual fuel usage is known. If so, insert actual fuel usage in appropriate column. The emissions will be calculated as follows:

Emission rate (lb/hr) = (HP or fuel rate) X Emission Factor (Potential to emit)

Emissions (tpy)=Emission rate (lb/hr) X load factor(Act Fuel/Max Fuel) X hrsX daysX ton/2000 lbs
(Actual emissions)

To customize the spreadsheet for your application you may want to delete lines for non-applicable equipment/activities or you can input "0" for the HP of equipment that does not apply. You may also need to copy/insert an entire line if more than one similar type of equipment is present.

Also, the production equipment can be customized further by adding the use of the equipment behind each type of engine, i.e.,

Turbine
Turbine - Gas Compressor

Burner
Burner - Line Heater

Summary Sheet

The Summary Sheet is designed to show a proposed estimate of emissions from an activity over a future period of time. In this example ten years was chosen. Each row links to the corresponding emission calculation spreadsheet for that year. For example, Row 7 of the summary corresponds to the annual totals from Sheet D. Row 8 links to the second emission calculation spreadsheet, Row 9 to the third and Row 10 to the fourth. Row 11 - 16 will carry down the emissions from the last spreadsheet with an emission rate greater than zero. The Summary Sheet will always carry down the last non-zero emission total. For example, if emission calculations are done for the years 1994 and 1995, then the 1995 total will be carried down through the year 2003. Row 17 of the summary sheet reflects the allowable for the air quality review exemption determination. If more or less years are needed you will have to modify the spreadsheet.

Print Instructions

The table below lists macros that were written to print sheets A, C, D, E, F, G, & H.

- \A - This macro prints 3 pages of instructions (sheet A).
- \C - This macro prints the emissions factors sheet (sheet C).
- \D - This macro prints the emissions calculations sheet (sheet D).
- \E - This macro prints the emissions calculations sheet (sheet E).
- \F - This macro prints the emissions calculations sheet (sheet F).
- \G - This macro prints the emissions calculations sheet (sheet G).
- \H - This macro prints the emissions calculations sheet (sheet H).
- \X - This macro prints all sheets - A, C, D, E, F, G, & H.

To run one of these macros, hold down ALT and press the letter in the macro range name. For example, to run the macro \A, press ALT-a.

AIR EMISSION CALCULATIONS

Fuel Usage Conversion Factors	Natural Gas Turbines		Natural Gas Engines		Diesel Recip. Engine		REF.	DATE
	SCF/hp-hr	9.524	SCF/hp-hr	7.143	GAL/hp-hr	0.0483	AP42 3.2-1	4/76 & 8/84

Equipment/Emission Factors	units	TSP	SOx	NOx	VOC	CO	REF.	DATE
NG Turbines	gms/hp-hr		0.00247	1.3	0.01	0.83	AP42 3.2-2	4/93
NG 2-cycle lean	gms/hp-hr		0.00185	11	0.43	1.5	AP42 3.2-2	4/93
NG 4-cycle lean	gms/hp-hr		0.00185	12	0.72	1.6	AP42 3.2-2	4/93
NG 4-cycle rich	gms/hp-hr		0.00185	10	0.14	8.6	AP42 3.2-2	4/93
Diesel Recip. < 600 hp.	gms/hp-hr	1	0.931	14	1.12	3.03	AP42 3.3-1	4/93
Diesel Recip. > 600 hp.	gms/hp-hr	0.24	1.49	11	0.33	2.4	AP42 3.4-1	4/93
NG Heaters/Boilers/Burners	lbs/mmescf	5	0.6	140	2.8	35	AP42 1.4-1	4/93
NG Flares	lbs/mmescf		0.57	71.4	60.3	388.5	AP42 11.5-1	9/91
Liquid Flaring	lbs/bbls	0.42	6.6	2.3	0.01	0.21	AP421.3-1	4/93
Tank Vapors	lbs/bbl				0.03		E&P Forum	1/93
Fugitives	lbs/hr/comp.				0.000025		API Study	12/93
Glycol Dehydrator Vent	lbs/mmescf				6.6		La. DEQ	1991
Gas Venting	lbs/scf				0.0034			

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AIR EMISSION CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	LATITUDE	LONGITUDE	CONTACT	PHONE	REMARKS									
TANA OIL AND GAS CORP OPERATIONS	HIGH ISLAND	A-416	OCS-G 15794	NOT APPLIC	NO. 1 AND B	X = 1,335,429	Y = 10,340,74	SHARON PEREZ	(713) 578-338	THIS INITIAL DEVELOPMENT OPERATIONS COORDINATION									
		EQUIPMENT		MAX FUEL		ACT. FUEL		POUNDS PER HOUR			TONS PER YEAR								
		HP	HP	GAL/HR	GAL/D	SCF/HR	SCF/D	HR/D	DAYS	TSP	SOx	NOx	VOC	CO	TSP	SOx	NOx	VOC	CO
		MMBTU/HR	MMBTU/HR	SCF/HR	SCF/D	SCF/HR	SCF/D	HR/D	DAYS	TSP	SOx	NOx	VOC	CO	TSP	SOx	NOx	VOC	CO
DRILLING	PRIME MOVER>600hp diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PRIME MOVER>600hp diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	AUXILIARY EQUIP<600hp diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600 hp diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600 hp diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIPELINE	PIPELINE LAY BARGE diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	SUPPORT VESSEL diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	PIPELINE BURY BARGE diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT VESSEL diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FACILITY	DERRICK BARGE diesel	8000	386.40	9273.60	8	8	8	4.23	26.26	193.83	5.81	42.29	0.10	0.83	4.65	0.14	1.01		
INSTALLATION	MATERIAL TUG	3000	144.90	3477.60	6	6	6	1.59	9.85	72.69	2.18	15.86	0.03	0.18	1.31	0.04	0.29		
PRODUCTION	RECIP.<600hp diesel CRANE	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP.>600hp diesel	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT VESSEL (SUPPLY)	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SUPPORT VESSEL (CREW)	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	TURBINE nat gas	0	0.00	0.00	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP 2 cycle lean nat gas	0	0.00	0.00	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP 4 cycle lean nat gas	0	0.00	0.00	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	RECIP 4 cycle rich nat gas	0	0.00	0.00	0	0	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BURNER nat gas	0	0.00	0.00	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	BPD	SCF/HR	COUNT															
	TANK-	0			0	0					0.00			0.00			0.00		
	FLARE-		0		0	0		0.00	0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	0.00
	PROCESS VENT-		0		0	0					0.00						0.00		
	FUGITIVES-			0.0		0					0.00						0.00		
	GLYCOL STILL VENT-		0		0	0					0.00						0.00		
DRILLING	OIL BURN	0			0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	GAS FLARE		0		0	0					0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
1996 YEAR TOTAL								5.81	36.10	266.52	8.00	58.15	0.13	0.81	5.96	0.18	1.30		
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES														2497.50	2497.50	2497.50	2497.50	61343.70
		75.0																	

AIR EMISSION CALCULATIONS

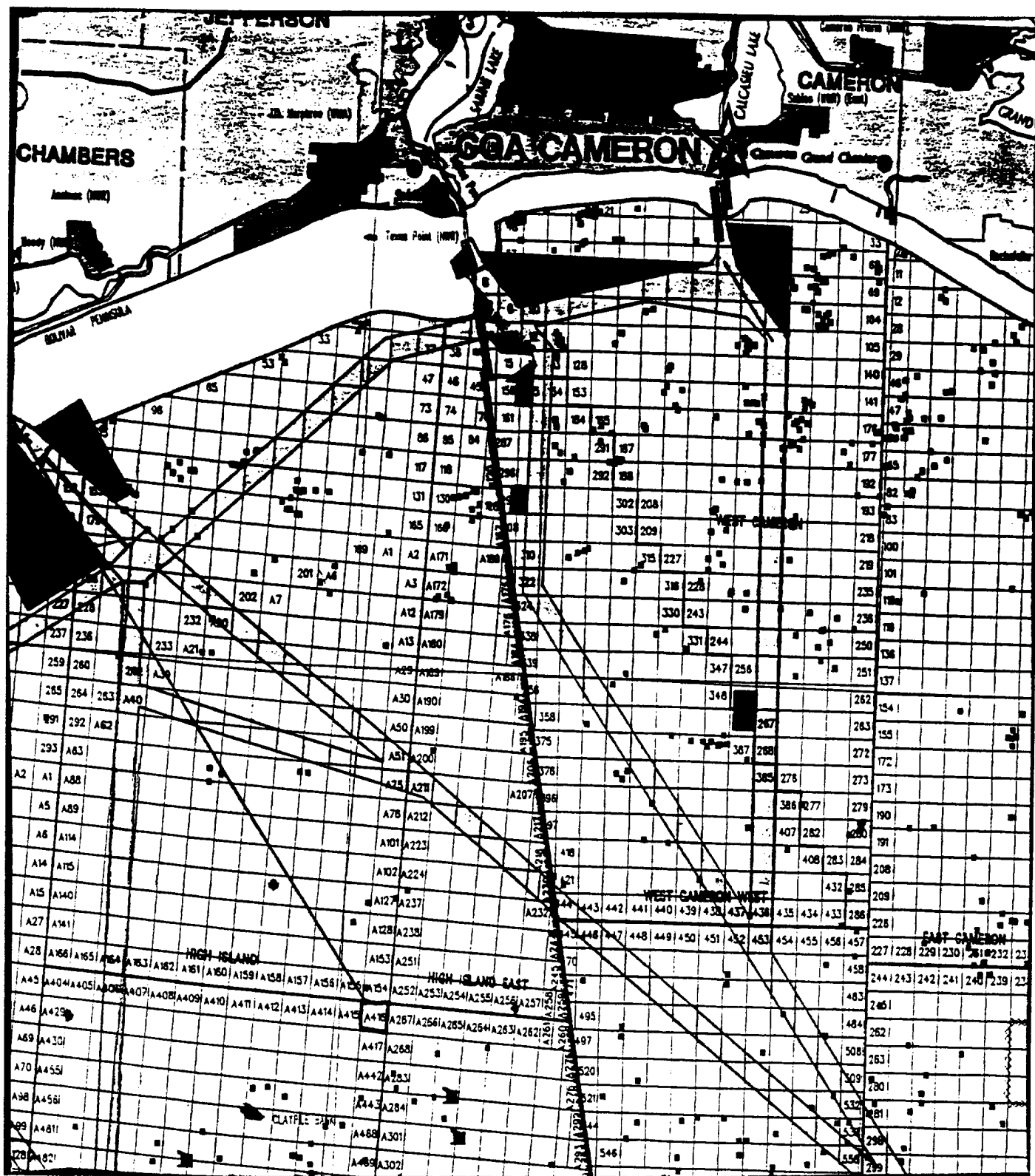
COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	LATITUDE	LONGITUDE	CONTACT	PHONE	REMARKS							
TANA OIL AND GAS CORP	HIGH ISLAND	A-416	OCS-G 1579	NOT APPLIC	NO. 1 AND B	X = 1,335.42	Y = 10,340.7	SHARON PEREZ	(713) 578-33	THIS INITIAL DEVELOPMENT OPERATIONS COORDINATION							
OPERATIONS	EQUIPMENT				RUN TIME		POUNDS PER HOUR					TONS PER YEAR					
	Diesel Engines	HP	MAX. FUEL	ACT. FUEL													
	Nat. Gas Engines	HP	GAL/HR	GAL/D													
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	DAYS	TSP	SOx	NOx	VOC	CO	TSP	SOx	NOx	VOC	CO	
DRILLING	PRIME MOVER>600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PRIME MOVER>600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PRIME MOVER>600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	AUXILIARY EQUIP<600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PIPELINE	PIPELINE LAY BARGE diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
INSTALLATION	SUPPORT VESSEL diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PIPELINE BURY BARGE diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FACILITY	DERRICK BARGE diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
INSTALLATION	MATERIAL TUG diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PRODUCTION	RECIP. <600hp diesel (CRANE)	75	3.62	86.94	2	175	0.17	0.15	2.31	0.19	0.50	0.03	0.03	0.40	0.03	0.09	
	SUPPORT VESSEL (SUPPLY)	2265	109.40	2625.59	10	11	1.20	7.43	54.88	1.65	11.97	0.07	0.41	3.02	0.09	0.66	
	SUPPORT VESSEL (CREW)	700	33.81	811.44	6	334	0.37	2.30	16.96	0.51	3.70	0.37	2.30	16.99	0.51	3.71	
	RECIP 2 cycle lean nat gas	0	0.00	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	RECIP 4 cycle rich nat gas	0	0.00	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	BURNER nat gas (GLYCOL, FIBER, ETC)	0.215	204.76	4914.29	24	334	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.00	0.11	0.00	0.03
	MISC.	BPD	SCF/HR	COUNT													
	TANK-	0			0	0				0.00					0.00		
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
	PROCESS VENT-		0		0	0				0.00					0.00		
	FUGITIVES-			5000.0		334				0.13				0.50			
	GLYCOL STILL VENT-		625000		24	334				4.13				16.53			
DRILLING	OIL BURN	0				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
1997 YEAR TOTAL							1.73	9.88	74.18	6.59	16.18	0.47	2.74	20.53	17.67	4.48	
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											2497.50	2497.50	2497.50	2497.50	61343.70	
		75.0															

AIR EMISSION CALCULATIONS

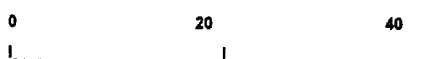
COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	LATITUDE	LONGITUDE	CONTACT	PHONE	REMARKS							
TANA OIL AND GAS CORPORATION	HIGH ISLAND	A-416	OCS-G 1579	NOT APPLIC	NO. 1 AND B	X = 1,335.42	Y = 10,340.7	SHARON PEREZ	(713) 578-33	THIS INITIAL DEVELOPMENT OPERATIONS COORDINATION							
		EQUIPMENT		RUN TIME		POUNDS PER HOUR					TONS PER YEAR						
		HP	MAX. FUEL	ACT. FUEL													
		HP	GAL/HR	GAL/D													
		HP	SCF/HR	SCF/D	HR/D	DAYS	TSP	SOx	NOx	VOC	CO	TSP	SOx	NOx	VOC	CO	
		MMBTU/HR	SCF/HR	SCF/D													
DRILLING	PRIME MOVER>600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PRIME MOVER>600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PRIME MOVER>600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	AUXILIARY EQUIP<600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	VESSELS>600hp diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PIPELINE	PIPELINE LAY BARGE diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
INSTALLATION	SUPPORT VESSEL diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	PIPELINE BURY BARGE diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	SUPPORT VESSEL diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FACILITY	DERRICK BARGE diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
INSTALLATION	MATERIAL TUG diesel	0	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
PRODUCTION	RECIP.<600hp (CRANE)	75	3.62	86.94	2	175	0.17	0.15	2.31	0.19	0.50	0.03	0.03	0.40	0.03	0.09	
	SUPPORT VESSEL (SUPPLY)	2265	109.40	2625.59	10	12	1.20	7.43	54.88	1.85	11.97	0.07	0.45	3.29	0.10	0.72	
	SUPPORT VESSEL (CREW)	700	33.81	811.44	6	365	0.37	2.30	16.96	0.51	3.70	0.41	2.52	18.57	0.56	4.05	
	TURBINE nat gas	0	0.00	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	RECIP.2 cycle lean nat gas	0	0.00	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	RECIP.4 cycle lean nat gas	0	0.00	0.00	0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	BURNER nat gas GLYCOL RECOVERED	0.215	204.76	4914.29	24	365	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.13	0.00	0.03	
	MISC.	BPD	SCF/HR	COUNT													
	TANK-	0			0	0				0.00				0.00			
	FLARE-		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	PROCESS VENT-		0		0	0				0.00				0.00			
	FUGITIVES-			5000.0		365				0.13				0.55			
	GLYCOL STILL VENT-		625000		24	365				4.13				18.07			
DRILLING	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
1998 YEAR TOTAL							1.73	9.88	74.18	6.59	16.18	0.51	2.99	22.39	19.31	4.89	
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											2497.50	2497.50	2497.50	2497.50	61343.70	
	75.0																

AIR EMISSION CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
TANA OIL AND GAS CORPORATION	HIGH ISLAND	A-416	OCS-G 15794	NOT APPLICABLE	NO. 1 AND B
Year	Emitted Substance				
	TSP	SOx	NOx	HC	CO
1996	0.13	0.81	5.96	0.18	1.30
1997	0.47	2.74	20.53	17.67	4.48
1998	0.51	2.99	22.39	19.31	4.89
1999	0.51	2.99	22.39	19.31	4.89
2000	0.51	2.99	22.39	19.31	4.89
2001	0.51	2.99	22.39	19.31	4.89
2002	0.51	2.99	22.39	19.31	4.89
2003	0.51	2.99	22.39	19.31	4.89
Allowable	2497.50	2497.50	2497.50	2497.50	61343.70



BEST AVAILABLE COPY



SCALE

TANA OIL AND GAS CORPORATION

HIGH ISLAND BLOCK A-416

VICINITY PLAT

SHOREBASE: GALVESTON, TEXAS

ATTACHMENT F