

TULSA (Petroleum Abstracts for Subscribers)/
TULSA2 (Petroleum Abstracts for Non-Subscribers)



Subject Coverage	<ul style="list-style-type: none"> • Alternate fuels and energy sources • Drilling • Ecology and pollution geochemistry • Geology • Geophysics 	<ul style="list-style-type: none"> • Mineral commodities • Petroleum exploration, Production, and development • Pipelining and storage • Production of oil and gas 	<ul style="list-style-type: none"> • Reservoir engineering and recovery methods • Supplemental technology • Well completion and services • Well logging
File Type	Bibliographic		
Access	<ul style="list-style-type: none"> • TULSA – Available only to Petroleum Abstracts Subscribers. • TULSA2 – For Petroleum Abstracts non-subscribers 		
Features	Thesauri	Controlled Term (/CT)	
		International Patent Classification (/IPC)	
	Alerts (SDIs)	Weekly or Monthly (Weekly is the default) (TULSA only)	
	CAS Registry Number® Identifiers	<input type="checkbox"/>	SLART <input checked="" type="checkbox"/>
	Keep & Share	<input checked="" type="checkbox"/>	Structures <input type="checkbox"/>
Record Content	<ul style="list-style-type: none"> • Bibliographic information • Abstract (TULSA only) • Indexing Terms 		
File Size	<ul style="list-style-type: none"> • More than 1.5 million records (12/2022) 		
Coverage	1965-present		
Updates	Weekly		
Language	English		
Database Producer	Petroleum Abstracts The University of Tulsa 800 S. Tucker Drive, JRH 1520 Tulsa, OK 74104-3189 USA Phone: +1 918-631-2297 Fax: +1 918-631-2100 Email: pa@utulsa.edu URL: http://www.pa.utulsa.edu/		

Sources

- Conferences
 - Government Reports
 - Journals
 - Monographs
 - Patents
 - Theses
-

User Aids

- Online Helps (HELP DIRECTORY lists all help messages available)
 - STNGUIDE
-

Cluster

- ALLBIB
- AUTHORS
- CHEMISTRY
- CORPSOURCE
- ENGINEERING
- ENVIRONMENT
- FUELS
- GEOSCIENCE
- HPATENTS
- NPS
- PATENTS
- PETROLEUM

STN Database Cluster information:

<http://www.stn-international.com/en/customersupport/customer-support#cluster+%7C+subjects+%7C+features>

Search and Display Field Codes

The fields that allow left truncation in this file are indicated by an asterisk (*).

Search Field Name	Search Code	Search Examples	Display Codes
Basic Index * (contains single words from the title (TI), abstract (AB) (1), controlled term (CT), and subject heading (SH) fields)	None (or /BI)	S RESCUE S OFFSHORE INSTALLATION# S SODIUM (L) SULFATE S ?STRUCT?	AB (1), CT, SH, TI
Abstract * (1)	/AB	S COST/AB S ?SHORE?/AB S (?SHORE?(S)?STRUCT?)/AB	AB
Accession Number	/AN	S 2006:9998/AN S 1998:10004/AN	AN
Application Country (code and text)	/AC	S FR/AC S GERMANY/AC	AI
Application Date (2)	/AD	S GB/AC AND 20050601-20060531/AD	AI
Application Number (3)	/AP	S GB1995-10434/AP S 1995GB-10434/AP	AI
Application Number, Original	/APO	S AR251,904/APO	AIO
Application Year (2)	/AY	S AY>=2003	AI
Author (includes inventor)	/AU	S LINDSEY J?/AU	AU, IN
Classification Code (4)	/CC	S WELL SURVEYING/CC	CC
Controlled Term (5) (includes major terms and subject headings)	/CT	S TAX/CT S SEISMIC ENERGY+BT/CT S *FAULT PATTERN/CT	CT
Controlled Word (contains single words from the controlled term (CT) and subject heading (SH) fields)	/CW	S SURFACT?/CW S CRITICAL MICELLE/CW	CT, SH
Corporate Source (4) (includes patent assignee)	/CS	S SERV? EQUIP?/CS	CS, PA
Cross reference	/CR	S 100086/CR	CR
Digital Object Identifier	/FTDOI	S 10.1016/J.APGEOCHEM.2012.04.012/FTDOI	FTDOI, SO
Document Number (Petroleum Abstracts accession number)	/DN	S 273659/DN	DN
Document Type (code and text)	/DT (or /TC)	S L1 AND P/DT S L1 AND PATENT/DT	DT
Entry Date (2)	/ED (or /UP)	S 20000100-20000300/ED	ED
Field Availability (1)	/FA	S PRAI/FA AND L5	FA
International Patent Classifications (2,5)	/IPC	S A01B/IPC	IPC
International Standard (Document) Number (contains ISBN and ISSN)	/ISN	S 3-936418-04-7/ISN S 0920-4105/ISN	ISN, SO
Inventor	/IN	S IRVINE R L/IN	AU, IN
Journal Title	/JT	S J PETROL SCI ENG/JT	JT, SO

Search and Display Field Codes (cont'd)

Search Field Name	Search Code	Search Examples	Display Codes
Language (code and text)	/LA	S DE/LA	LA
Meeting Title	/MT	S (ALTERNAT? ENERGY AND MIAMI)/MT	MT, SO
Number of Report	/NR	S SPE-10006/NR	NR, SO
Patent Assignee (4)	/PA	S PECHORA DES/PA	CS, PA
Patent Country (code and text)	/PC	S GB/PC	PI
Patent Kind Code	/PK	S USB1/PK	PI
Patent Number (3)	/PN	S EP100099/PN	PI
Patent Number/Kind Code	/PNK	S EP100099/PNK	PNK
Priority Application Country (code and text)	/PRC	S PORTUGAL/PRC	PRAI
Priority Application Date (2)	/PRD	S 19951210/PRD	PRAI
Priority Application Number (3)	/PRN	S 1976PL-0192149/PRN	PRAI
Priority Number, Original	/PRNO	S PL167,241/PRNO	PRAO
Priority Application Year (3)	/PRY	S 2001-2005/PRY	PRAI
Publication Date (2)	/PD	S 20040111/PD S PD>=19990600 S OCT 31,1999-DEC 31, 1999/PD	PI, SO
Publication Year (2)	/PY	S PY>=2004	PY
Source (contains journal title, collation information (volume, issue, pages, number of references), number of report, publication date, meeting information (title, location, date), publisher, publisher location, ISSN, ISBN, patent information, application information, priority information, information patent classifications, pages, and claims)	/SO	S (PETROL AND V 48)/SO S (SPE AND MTG)/SO AND 1995-1996/PY	SO
Subject Heading	/SH	S STRATIGRAPHIC MAPPING/SH	SH
Title *	/TI	S WELL CEMENT/TI S ?DRILL?/TI	TI
Update Date	/UP	S SEP 2022/UP	ED

(1) TULSA only.

(2) Numeric search field that may be searched with numeric operators or ranges.

(3) Either STN format or Derwent format may be used.

(4) Search with implied (S) proximity is available in this field.

(5) There is an online thesaurus associated with this field.

Super Search Fields

Enter a super search code to execute a search in one or more fields that may contain the desired information. Super search fields facilitate crossfile and multifile searching. EXPAND may not be used with super search fields. Use EXPAND with the individual field codes instead.

Search Field Name	Search Code	Fields Searched	Search Examples	Display Codes
Patent Application and Patent Priority Number (1)	/APPS	/AP, /PRN	S US1970-25003/APPS	AI, PRAI
Patent Countries	/PCS	/PC	S DE/PCS	PI
Patent Numbers (1)	/PATS	/PN	S EP536950/PATS	PI

(1) Either STN format or Derwent format may be used.

Property Fields¹⁾

In TULSA/TULSA2 a numeric search for a specific set of physical properties (/PHP) is available within the abstract and title fields. The numeric values are not displayed as single fields, but highlighted within the hit displays.

Use EXPAND/PHP to search for all available physical properties. A search with the respective field codes will be carried out in all database fields with English text. The /PHP index contains a complete list of codes and related text for all physical properties available for numeric search.

Field Code	Property	Unit	Symbol	Search Examples
/AOS	Amount of substance	Mol	mol	S 10 /AOS
/BIR	Bit Rate	Bit/Second	bit/s	S 330/BIR
/BIT	Stored Information	Bit	Bit	S BIT > 3 MEGABIT
/CAP	Capacitance	Farad	F	S 1-10 MF/CAP
/CDN	Current Density	Ampere/Square Meter	A/m ²	S CDN>10 A/M**2
/CMOL	Molarity, Molar Concentration	Mol/Liter	mol/L	S UREA/BI (S) 2/CMOL
/CON	Conductance	Siemens	S	S 1S-3/CON
/DB	Decibel	Decibel	dB	S DB>50
/DEG	Degree	Degree	°	S LOW LATITUDE/BI (S) 30/DEG
/DEN	Density (Mass Concentration)	Kilogram/Cubic Meter	kg/m ³	S GEMINI SURFACTANTS/BI (S) 5E-3-10E-3/DEN
/DEQ	Dose Equivalent	Sievert	Sv	S 2/DEQ
/DOS	Dosage	Milligram/Kilogram	mg/kg	S DOS>0.8
/DV	Viscosity, dynamic	Pascal * Second	Pa * s	S DV>10
/ECD	Electric Charge Density	Coulomb/Square Meter	C/m ²	S 1 C/M**2 /ECD
/ECH	Electric Charge	Coulomb	C	S 2-3/ECH
/ECO	Electrical Conductivity	Siemens/Meter	S/m	S ECO>800 S/M (5A) METAL
/ELC	Electric Current	Ampere	A	S 1-10/ELC
/ELF	Electric Field	Volt/Meter	V/m	S 1-300/ELF
/ENE	Energy	Joule	J	S TORQUE (5A) 20 - 30 /ENE
/ERE	Electrical Resistivity	Ohm * Meter	Ohm * m	S ERE>2
/FOR	Force	Newton	N	S 50 N /FOR
/FRE	Frequency	Hertz	Hz	S OSCILLAT?/BI (S) 1- 3/FRE
/IU	International Unit	none	IU	S IU>1000 (P) ANTIBIOTIC
/KV	Viscosity, kinematic	Square Meter/Second	m ² /s	S SILICON?/BI (5A) 10E-5 M**2/S /KV
/LEN (or /SIZ)	Length, Size	Meter	m	S 1-4/LEN
/LUME	Luminous Emittance, Illuminance	Lux	lx	S 10-50/LUME
/LUMF	Luminous Flux	Lumen	Lm	S LUMF>10
/LUMI	Luminous Intensity	Candela	cd	S LUMI<4
/M	Mass	Kilogram	kg	S ALLOY/BI (30A) 1E-10-1E-5/M
/MCH	Mass to Charge Ratio	none	m/z	S MCH=50

Property Fields¹⁾ (cont'd)

Field Code	Property	Unit	Symbol	Search Examples
/MFD (or /MFS)	Magnetic Flux Density	Tesla	T	S MFD>102
/MFR (or /MFL)	Mass Flow Rate	Kilogram/Second	kg/s	S MFR<0.1
/MM	Molar Mass	Gram/Mol	g/mol	S 2000-3000 G/MOL/MM
/MOLS	Molality of Substance	Mol/Kilogram	mol/kg	S 01.-10 MOL/KG/MOLS
/MVR	Melt Volume Rate, Melt Flow Rate	none	g/10 min	S 3/MVR
/NUC	Nutrition Content	none	g/100 kcal	S NUC<100 (P) NUTRIENT
/PER	Percent (Proportionality)	none	%	S POLYMER?/AB (5A) 4/PER
/PERA	Permittivity, Absolute	Farad/Meter	F/m	S DIELECTRIC/BI (S) 4- 4.1/PERA
/PHV	pH Value	pH	pH	S 7.4-7.6/PHV
/POW	Power	Watt	W	S MICROWAVE/BI (S) POWER/BI (S) 350 WATT/POW
/PRES (or /P)	Pressure	Pascal	Pa	S (VACUUM (5A) DISTILL?)/BI (S) 1000-1100/PRES
/RAD	Radioactivity	Becquerel	Bq	S RAD/PHP
/RES	Electrical Resistance	Ohm	Ohm	S ELECTRICAL/BI (S) 10-100/RES
/RSP	Rotational Speed	Revolution/Minute	rpm	S 2-100/RSP (S) MACHINE/AB
/SAR	Area /Surface Area	Square Meter	m ²	S (COATING? OR FOIL?)/BI (S) 10-100/SAR
/SOL	Solubility	Gram/100 gram	g/100 g	S SOL>20 (10W) WATER
/STSC	Surface Tension	Joule /Square Meter	J/m ²	S 60 J/M**2/STSC
/TCO	Thermal Conductivity	Watt/Meter * Kelvin	W/m * K	S 1/TCO (S) HEAT?
/TEMP (or /T)	Temperature	Kelvin	K	S (HEAT? (10A) LIQUID?) (S) 5/TEMP
/TIM	Time	Second	s	S ?INCUB?/BI (10A) 10-50/TIM
/VEL (or /V)	Velocity	Meter per Second	m/s	S REDUC?/BI (S) 1E-3-5E-3/VEL
/VELA	Velocity, angular	Radian/Second	rad/s	S VELA>10
/VLR	Volumetric Flow Rate	Cubic Meter/Second	m ³ /s	S 1-2/VLR (5A) POWDER
/VOL	Volume	Cubic Meter	m ³	S 1E-8-2E-8/VOL.EX
/VOLT	Voltage	Volt	V	S POTENTIAL (10A) 5E-3 V <VOLT<7E-3 V

1) Exponential format is recommended for the search of particularly high or low values, e.g. 1.8E+7 or 1.8E7 (for 18000000) or 9.2E-8 (for 0.00000092).

Controlled Term (/CT) Thesaurus

There is an exploration and production and geographic term thesaurus available in the Controlled Term (/CT) field. All Relationship Codes can be used with either the SEARCH or EXPAND command.

Relationship Code	Content	Example
ALL	All associated terms (BT, SELF, NOTE, USE, USE+, UF, UF+, NT, RT)	E PIPELINE+ALL/CT
BT	Broader Terms (BT, SELF, NOTE)	S COLNETT BASIN+BT/CT
HIE	Hierarchy terms (all Broader and Narrower Terms) (BT, SELF, NOTE, NT)	E SUBATOMIC PARTICLE+HIE/CT
KT	Keyword Terms (Multiword phrases containing the term) (SELF, KT)	E POWER+KT/CT
NOTE	Notes (SELF, NOTE)	E RESERVOIR BOUNDARY+NOTE/CT
NT	Narrower Terms (SELF, NOTE, NT)	E DEPOSIT+NT/CT
PFT	All Preferred and Forbidden Terms (SELF, UF, UF+, USE, USE+)	E LAND TOPOLOGY+PFT/CT
RT	Related Terms (SELF, RT)	E CLAY CHEMISTRY+RT/CT
STD	All Broader, Narrower, and Related Terms (BT, SELF, NOTE, NT, RT)	E FUEL+STD/CT
UF	Used For terms (Forbidden Terms) (SELF, UF, UF+)	E ABANDONMENT+UF/CT
USE	Use terms (Preferred Terms) (SELF, USE, USE+)	E CROSS FRACTURE+USE/CT

International Patent Classification (/IPC) Thesaurus

The following Relationship Codes may be used with the EXPAND and SEARCH commands in the /IPC field:

Relationship Code	Description	Example
ALL	All associated terms	E A63B0023-04+ALL/IPC
ADV	Advanced level IPC codes	E A63B0023-00+ADV/IPC
BRO	Complete class	E B015+BRO/IPC
BT	Broader term	E B01B0001-02+BT/IPC
COR	Core level IPC codes	E B01B0001-02+CORE/IPC
ED	Complete title of the SELF term and IPC manual edition	
HIE	Hierarchy terms (all broader and narrower terms)	E A61Q0001-00+HIE/IPC
INDEX	Complete title of the SELF term	E E21D+INDEX/IPC
KT	Keyword term	E BOREHOLIST+KT/IPC
NEXT	Next classification	E E21D+NEXT/IPC
NT	Narrower term	E E21B0043-00+NT/IPC
PREV	Previous classification	E G01N0001-08+PREV/IPC
RT	Related term	E E10M0113-10+RT/IPC
TI	Complete title of the SELF term and Broader Terms	E C10M0113-10+TI/IPC

DISPLAY and PRINT Formats

Any combination of display formats listed below may be used to display or print answers. Multiple codes must be separated by spaces or commas, e.g., D L1 1-5 TI AU, D L1 1-5 TI, AU. The fields are displayed in the order requested.

Hit-term highlighting is available in all fields. Highlighting must be on during SEARCH to use the HIT, KWIC, and OCC formats.

Format	Content	Examples
AB (1) AI (AP) AIO (APO) AN AU CC CR CS CT DN DT (TC) ED FTDOI (2) IPC IN ISN (2) JT (2) LA MT (2) NR PA PI (PN, PATS) PRAI (PRN) PRAO PY (2) SH SO TI UP	Abstract Application Information Application Information, Original Accession Number Author or Inventor Classification Code Cross reference Corporate Source or Patent Assignee Controlled Term (includes SH) Document Number (Petroleum Abstracts accession number) Document Type Entry Date Digital Object Identifier International Patent Classification Inventor International Standard (Document) Number (ISBN or ISSN) Journal Title Language Meeting Title Number of Report Patent Assignee Patent Information Priority Information Priority Information, Original Publication Year Subject Heading Source Title Update Date	D L4 1-4 AB D L1 3 AI PI D AIO D AN 1,3-5 D 1-3,7,8 AU D CC 1- D CR 1-5 D L3 CS 3 D 1 3 6,8 CT D DN D DT D ED D FTDOI D IPC D IN PA D ISN 3 4 D JT D TI LA D L3 MT D NR D L3 4 PA PI D PI D PRAI D PRAO D PY D SH D SO D TI 1-10 D UP
ABS ALL DALL IALL APPS BIB IBIB IND (2) SCAN (3) STD ISTD TRIAL (TRI, SAM) (1)	AB AN, DN, CR, TI, AU, IN, CS, PA, PI, AI (AIO), PRAI (PRAO), NR, SO, DT, LA, ED, AB, IPC, CC, SH, CT ALL, delimited for post processing ALL. Indented with text labels AI, PRAI AN, DN, CR, TI, AU, IN, CS, PA, PI, AI (AIO), PRAI (PRAO), NR, SO, DT, LA, ED (BIB is the default) BIB, indented with text labels IPC, CC, SH, CT TI, IPC, CC, SH, CT (random display without answer numbers) BIB plus IPC STD, indented with text labels AN, TI, IPC, CC, SH, CT	D ABS D 1-5 ALL D DALL D IALL D APPS 5-10 D BIB D IBIB D 10 20 IND D SCAN D STD D ISTD D TRIAL TOTAL
HIT KWIC OCC (1)	Fields containing hit terms Hit terms plus 20 words on either side (Key-Word-In-Context) Number of occurrences of hit terms and fields in which they occur	D HIT D KWIC NOH D OCC

(1) TULSA only.

(2) Custom display only.

(3) SCAN must be specified on the command line, i.e., D SCAN or DISPLAY SCAN.

SELECT, ANALYZE, and SORT Fields

The SELECT command is used to create E-numbers containing terms taken from the specified field in an answer set.

The ANALYZE command is used to create an L-number containing terms taken from the specified field in an answer set.

The SORT command is used to rearrange the search results in either alphabetic or numeric order of the specified field(s).

Field Name	Field Code	ANALYZE/ SELECT (1)	SORT
Abstract	AB	Y	N
Accession Number	AN	Y	N
Application Country	AC	Y (2)	Y
Application Date	AD	Y	Y
Application Information	AI	Y (3)	Y
Application Number	AP	Y	Y
Application and Priority Numbers	APPS	Y (4)	N
Application Year	AY	Y (2)	Y
Author/Inventor	AU	Y	Y
Citation	CIT	Y (2,5)	N
Classification Code	CC	Y	Y
Controlled Term	CT	Y	N
Corporate Source/Patent Assignee	CS	Y	Y
Cross Reference	CR	Y (6)	N
Digital Object Identifier	FTDOI	N	Y
Document Number (Petroleum Abstracts accession number)	DN	Y	Y
Document Type	DT	Y	Y
Entry Date	ED	Y	N
International Patent Classifications	IPC	Y	Y
International Standard Book Number	ISBN	N	Y
International Standard (Document) Number	ISN	Y (7)	N
International Standard Serial Number	ISSN	N	Y
Journal Title	JT	Y	Y
Language	LA	Y	Y
Meeting Title	MT	Y	Y
Number of Report	NR	Y	Y
Occurrence Count of Hit Terms	OCC	N	Y
Patent Country	PC (PCS)	Y (2)	Y
Patent Information	PI	Y (8)	Y
Patent Kind Code	PK	Y	Y
Patent Number	PN (PATS)	Y	Y
Patent Number/Kind Code	PNK	Y	N
Priority Application Country	PRC	Y (2)	Y
Priority Application Date	PRD	Y	Y
Priority Application Information	PRAI	Y (9)	Y
Priority Application Number	PRN	Y	Y
Priority Application Year	PRY	Y (2)	Y
Publication Date	PD	Y	Y
Publication Year	PY	Y	Y
Source	SO	Y (10)	N
Subject Heading	SH	Y	N
Title	TI	Y (default)	Y
Update Date	UP	Y	N

TULSA/TULSA2

- (1) HIT may be used to restrict terms extracted to terms that match the search expression used to create the answer set, e.g., SEL HIT CT.
- (2) SELECT HIT and ANALYZE HIT are not valid with this field.
- (3) Selects or analyzes Application Number with /AP appended to the terms created by SELECT.
- (4) Selects or analyzes AP and PRN with /APPS appended to the terms created by SELECT.
- (5) Extracts first author, publication year, and first page with a truncation symbol appended and with /RE appended to the terms created by SELECT.
- (6) Appends /DN to the terms created by SELECT.
- (7) Selects or analyzes ISSN or ISBN with /ISN appended to the terms created by SELECT.
- (8) Selects or analyzes patent number with /PN appended to the terms created by SELECT.
- (9) Selects or analyzes priority application number with /PRN appended to the terms created by SELECT.
- (10) Selects or analyzes ISBN or ISSN with /SO appended to the terms created by SELECT.

Sample Records**DISPLAY ALL**

AN 2022:34993 TULSA
 DN 1553087
 TI DEVELOPMENT OF A POSITION MEASURING DEVICE OF A DEEP-SEA PIPELINE BASED
 ON FLANGE CENTER POSITIONING
 AU WANG, Z; DANG, H; WANG, T; ZHANG, B
 CS HARBIN ENGINEERING UNIV
 ; HEBEI UNIV TECHNOLOGY
 SO JOURNAL OF MARINE SCIENCE AND ENGINEERING v.8, no.2, Feb. 2020. (ISSN
 2077-1312; Article no.86); DOI: <https://doi.org/10.3390/jmse8020086>
 DT Journal
 LA English
 ED Entered STN: 11 Oct 2022
 Last updated on STN: 11 Oct 2022
 AB A deep-sea pipeline position and attitude-measuring device based on
 pipeline outer circle positioning can measure the spatial relative
 positions of the end faces of two oil pipelines in the deep sea. This
 device can provide the necessary data to make a transition pipeline
 connecting two sections of oil pipelines together. However, after
 analyzing the data measured by this device, it is found that the
 measurement data has a large error because the error transmission
 coefficient of the measurement value is too large. In order to reduce
 the error transfer coefficient, a new measuring device for measuring the
 posture of deep-sea pipelines by a tensioning rope was proposed. Unlike
 previous measuring devices, this measuring device is based on the
 positioning of the flange center of the pipe instead of the pin on the
 outer circle of the pipe. With the comparison of positioning methods
 between fixing in the center of flange and fixing the outer wall of
 pipeline, the former can reduce the transition matrix in the process of
 solving the relative position of the two pipes, and then reduce the
 magnification of the measurement sensor error. It also reduces two
 measurement parameters. The solving formula of the position and attitude
 of the measuring device based on the outer circle positioning of the
 pipeline is analyzed. It is proved that the error transmission
 coefficient of the measuring device based on the flange center
 positioning is smaller. Experiments show that compared with the
 positioning method based on the outer circle of the pipe, the
 positioning method based on the flange center has a higher accuracy.
 CC PIPELINING, SHIP & STORAGE
 SH *UNDERWATER PIPELINE
 CT *DEEP WATER; *DEPTH; *DETECTOR; *FITTING; *FLANGE; *FORCE; *INSTRUMENT;
 *PIPELINE; *POSITIONING; *STRESS; *TENSION; *WATER DEPTH; ACCURACY;
 CABLE; COORDINATE SYSTEM; ENGLISH; ERROR; FLUID FLOW; GLOBAL POSITIONING
 SYSTEM; MAN MADE SATELLITE; MATHEMATICAL MODEL; MATHEMATICS; MODEL;
 PIPELINE FLOW; PIPELINE TRANSPORTATION; PIPELINING, SHIP & STORAGE;
 ROPE; TRANSPORTATION

DISPLAY STD OF PATENT

AN 2010:39079 TULSA
 DN 1059418
 CR 803748
 TI [R] PROCESS AND ASSEMBLY FOR IDENTIFYING AND TRACKING ASSETS
 IN ZIEROLF, J A
 PA MARATHON OIL CO
 PI US 20100171593 A1 20100708
 AI US 2010-725254 20100316
 PRAI US 2006-377736 20060316
 US 2001-843998 20010427
 SO U.S. 2010/0,171,593A1, p. 7/8/2010, f. 3/16/2010 (Appl. 725,254), pr.
 U.S. 4/27/2001 (Appl. 843,998) and U.S. 3/16/2006 (Appl. 377,736)
 (H04Q-0005/22; G06F-0017/00). (9 pp) SRPA# 803,748
 DT Patent
 LA English
 ED Entered STN: 18 Jan 2011
 Last updated on STN: 18 Jan 2011
 IPC H04Q0005-22; G06F0017-00

In North America

CAS
 STN North America
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